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This instruction implements Air Force Policy Directive (AFPD) 11-2, *Aircraft Rules and Procedures* and references AFI 11-202, Volume 3, *General Flight Rules,* as well as Air Force Tactics Techniques and Procedures (AFTTP) 3-3.KC135. It establishes policy for the operation of the KC-135 aircraft to safely and successfully accomplish worldwide mobility missions. This instruction applies to all commanders, operations supervisors, and aircrew assigned or attached to all flying activities of commands operating KC-135 aircraft. This publication is applicable to Air Mobility Command (AMC), Air Force Reserve Command (AFRC), Air National Guard (ANG), Pacific Air Forces (PACAF), United States Air Forces Europe (USAFE), and Air Education and Training Command (AETC) units. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 33-363, *Management of Records* and disposed of in accordance with the *Air Force Records Information Management System (AFRIMS) Disposition Schedule (RDS)* located at **https://www.my.af.mil/gcss-af61a/afrims/afrims**. This publication requires the collection and or maintenance of information protected by the Privacy Act (PA) of 1974. Forms affected by the

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(AETC) This supplement implements and extends the guidance of AFI 11-2KC-135, Volume 3, 18 September 2008. This supplement applies to all AETC units. It applies to Air Force Reserve Command (AFRC) units under AETC oversight and Air National Guard (ANG)-gained units and associate personnel who conduct approved AETC flying syllabuses. Units may supplement this instruction. Each unit will coordinate its supplement with AETC/A3V before publication and forward one copy to AETC/A3V after publication. Submit suggested improvements to this instruction on AF Form 847, *Recommendation for Change of Publication*, through standardization and evaluation (Stan/Eval) channels, to AETC/A3V. (AF Form 847 is prescribed in AFI 11-215, *USAF Flight Manuals Program (FMP)*. Refer to that publication for guidance on filling out the form.) See Attachment 1 for a glossary of references and supporting information. References to forms within this instruction also equate to electronic products when authorized. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 33-363, *Management of Records*, and disposed of in accordance with the *Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS)* located at **https://www.my.af.mil/afrims/afrims/afrims/rims.cfm**.

(AETC) Policy and procedures are enacted to provide for quality and consistency in training and evaluation. Occasionally, unique circumstances may warrant special consideration and possible waiver of policy provisions. AETC/A2/3/10 is the waiver authority unless otherwise specified in this supplement. Send waiver requests through Stan/Eval channels to AETC/A3V. The operations group (OG/CC) commander, or equivalent, of the unit that generated their supplement will handle waivers to supplemental guidance. Additionally, universal waivers that would change the intent of the policy outlined in this instruction are not authorized without AETC/A2/3/10 approval. Waivers may be issued for a maximum of 1 year or until this instruction is superseded, whichever occurs first. All waivers must be reviewed and renewed in 1 year increments to ensure their continued validity. Units will file a copy of approved written waivers to this volume according to AFI 33-360, *Publications and Forms Management*.

SUMMARY OF CHANGES

This document is substantially revised and must be completely reviewed. Major changes include deleting unused chapters. Some paragraphs and chapters were renumbered as a result. Defines Pilot in Command Responsibilities and Authority (paragraph **2.3**), defines Basic and Augmented Crew (paragraph **3.2.2**), defines Aircrew Management procedures (paragraph **3.7**), defines Counter-Fatigue Management Program (paragraph **3.9**), defines Additional Crewmembers (paragraph **3.16**), updates **Chapter 4**, *Aircraft Operating Restrictions*, with Block 40 Minimum Equipment Lists (paragraph **4.5.3**), revises Aircraft Commander Takeoff and Landing Policy (paragraph **5.4**), clarifies use of Portable Electronic Devices (paragraph **5.9**), standardizes

Advisory Calls (paragraph **5.11**), expands on IMT account procedures (paragraph **6.7**), refines Briefing Requirements (paragraph **6.12**), expands Departure Planning (paragraph **6.16**), revises Weather Minimums for Takeoff (paragraph **6.17**), defines use of Operational Risk Management (paragraph **6.22**), provides contact information for BOEING C/KC-135 In-fight Emergency Support (paragraph **6.38.3**), provides Sector Operations Centers information for Mode 4 in-flight checks (paragraph **6.43.5**), provides Flight Data Recorder/Cockpit Voice Recorder information (paragraph **6.49**), provides Passenger Restrictions (paragraph **6.51**), deletes Pacer CRAG Procedures (**section 6H**), defines Aircrew Complement (paragraph **6.58**), clarifies Standby Aircraft Security (paragraph **7.4**), explains use of AMC FORM 97, AMC In-Fight Emergency and Unusual Occurrence Worksheet (paragraph **8.4**), directs use of BUNO number for Navy and Marine receivers (paragraph **8.6.3.6**), defines limitations with Passengers on Training Missions (paragraph **9.2**), defines limitations for Training on Operational Missions (paragraph **9.4**), deletes **Chapter 10,** *Local Operating Procedures* and replaces with *Aircrew Operations in Chemical, Biological, Radiological, and Nuclear Threat Environment*, changes **Chapter 11**, *Navigation Procedures*, adds **Chapter 12**, *Aircrew Maintenance Support Procedures*, deletes **Chapter 13,** *Boom Operator Procedures* and replaces with *Cargo and Passenger Handling Procedures*, adds **Chapter 14**, *Fuel Planning*, deletes Tactics Maneuvers from **Chapter 17** and moves tactics maneuvers to AFTTP 3-3.KC-135, revises **Chapter 18**, *Aircraft Formation*, to include appropriate references to ATP-56 (B).

SUPPORTING INSTRUCTIONS

C/KC-135 Aircraft Configuration AFI 11-2KC-135, Volume 3, Addenda A
Nuclear Employment SIOP (Classified) AFI 11-2KC-135, Volume 3, Addenda B
KC-135 Special Operations AFI 11-2KC-135, Volume 3, Addenda C

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Attachment 1—(AETC) GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION **219**

Chapter 1

GENERAL INFORMATION

1.1. General.

1.1.1. This Air Force Instruction (AFI) provides policy for operating the KC-135 aircraft. It is an original source document for many areas but, for efficacy, restates information found in aircraft flight manuals, flight information publications (FLIP), and other Air Force directives. When guidance in this AFI conflicts with another basic/source document, that document takes precedence. For matters where this AFI is the source document, waiver authority is In Accordance With (IAW) paragraph **1.4**. For matters where this AFI repeats information in another document, follow waiver authority outlined in the basic/source document.

1.1.1. **(AETC)** AFTTP and AFTTP(I) publications are not directive. IAW AFI 33-360, ―Complying with publications in this category is expected, but not mandatory." The tactics,techniques, and procedures in AFTTP 3-3.KC-135 are still authoritative; deviations require sound judgment and careful consideration. In cases where AFTTP 3-3.KC-135 and AFIs conflict, the applicable AFI will take precedence.

1.1.2. Unit commanders and agency directors involved with or supporting KC-135 operations shall make current copies of this AFI available to appropriate personnel. Transportation and Base Operations passenger manifesting agencies will maintain a current copy of this AFI.

1.2. Applicability. This AFI applies to aircrew members, support personnel, and managers involved with employing KC-135 aircraft.

1.3. Key Words Explained.

1.3.1. ―Will" and ―shall" indicate a mandatory requirement.

1.3.2. ―Should" indicates a preferred, but not mandatory, method of accomplishment.

1.3.3. . ―May" indicates an acceptable or suggested means of accomplishment.

1.3.4. **"NOTE"** indicates operating procedures, techniques, etc., considered essential to emphasize.

1.3.5. **"CAUTION"** indicates operating procedures, techniques, etc., which could result in damage to equipment if not carefully followed.

1.3.6. **"WARNING"** indicates operating procedures, techniques, etc., which could result in personal injury or loss of life if not carefully followed.

1.4. Deviations and Waivers. Do not deviate from policies in this AFI except when the situation demands immediate action to enhance safety. The Pilot in Command (PIC) is vested with ultimate mission authority and responsible for each course-of-action they choose to take.

1.4.1. Deviations. The PIC shall report deviations or exceptions taken without a waiver through command channels to their Chief, Major Command (MAJCOM) Stan/Eval, who in turn shall notify Chief, AMC Stan/Eval as appropriate for follow-on action.

1.4.1. **(AETC)** Deviations. Report deviations through command channels to AETC/A3V.

1.4.2. Waivers. Unless otherwise directed, waiver authority for contents of this instruction is the MAJCOM/A3/DO with mission execution authority. Obtain waivers to deviate from provisions in this AFI via MAJCOM Stan/Eval.

1.4.2. **(AETC)** Waivers. AETC/A2/3/10 is the waiver authority for all contents of this instruction for AETC units unless chopped to another MAJCOM. Submit waivers through command channels to AETC/A2/3/10.

1.4.2.1. Permanent waivers affect theater unique circumstances and are enduring in nature. List MAJCOM/A3/DO-approved permanent waivers in the MAJCOM supplement (see para. **1.5**)

1.4.2.2. Long-term waivers affect multiple aircraft/multiple missions but are not permanent in nature (expire at a specific date/time). MAJCOM Stan/Eval shall send HQ AMC Stan/Eval copies of MAJCOM/A3/DO-approved long-term waivers.

1.4.2.3. Short-notice waivers are for specific missions in execution. PICs shall use the Waiver Protocol procedure in **Chapter 4** to secure MAJCOM/A3/DO approval for short-notice waivers.

1.4.2.3.1. USAFE planning/execution agencies may use the waiver protocol to secure MAJCOM/A3/DO approval for short-notice waivers.

1.5. Supplemental Procedures. This AFI is a basic directive. Each user MAJCOM or operational theater may supplement this AFI according to AFPD 11-2, *Aircraft Rules and Procedures*, and AFI 33-360, Volume 1, *Publications and Forms Management*. Stipulate unique MAJCOM procedures (shall not be less restrictive than this basic document) and publish MAJCOM/A3/DO-approved permanent waivers in the MAJCOM supplement.

1.5.1. Combined Command Operations. Plan and conduct all operations that include forces from multiple MAJCOMs using provisions in this AFI. Do not assume or expect aircrews to perform MAJCOM theater unique procedures without owning MAJCOM/A3/DO approval and advance training.

1.5.2. Coordination Process. Forward MAJCOM approved supplements (attach AF Form 673, **Request To Issue Publication**) to HQ AMC/A3V, 402 Scott Dr., Unit 3A1, Scott AFB IL, 62225-5302. Chief, AMC Stan/Eval shall facilitate the HQ AMC/A3 and HQ AFFSA/A3O approval process.

1.6. Local Supplement Coordination Process. Operations Group commanders (OG/CCs) shall define local operating procedures to this instruction in a unit supplement. OG/CCs shall obtain approval from Numbered Air Force (NAF), if applicable, and MAJCOM prior to releasing their supplement. Send an electronic copy of the approved version to HQ AMC/A3V, NAF/DO (if applicable) and MAJCOM/A3/DO.

1.6. (AETC)Local Supplement Coordination Process. Send unit supplements through command channels to AETC/A3V for coordination prior to approval.

1.7. Requisition and Distribution Procedures Unit commanders shall use T.O. 00-5-1, *AF Technical Order System* procedures to provide aircrew members and associated support personnel current copies and changes of this AFI.

1.8. Improvement Recommendations. Send comments and suggested improvements to this instruction on an AF Form 847, (IMT-V1), **Recommendation for Change of Publication**, through channels to HQ AMC/A3V, 402 Scott Drive Unit 3A1, Scott AFB IL, 62225-5302 (or e-mail to: **AMC/A3V-847@scott.af.mil**) IAW procedures in AFI 11-215, *USAF Flight Manuals Program (FMP)* and MAJCOM Supplement.

1.9. Definitions. Find explanations or definitions of terms and abbreviations commonly used in the aviation community in Code of Federal Regulations (CFR) Title 14, Part 1; *DoD FLIP General Planning*, Chapter 2; and Joint Pub 1-02, *The DoD Dictionary of Military and Associated Terms*. See **Attachment 1** for common terms used herein.

1.10. Aircrew Operational Reports. The reporting requirements in this instruction are exempt from licensing IAW paragraph 2.11.10. of AFI 33-324, *The Information Collections and Reports Management Program; Controlling Internal, Public, and Interagency Air Force Information.*

Chapter 2

COMMAND AND CONTROL

2.1. General. The Mobility Air Forces (MAF) command and control (C2) network consists of the following C2 centers: 618th Tanker Airlift Control Center (618 TACC) Global Cell, Pacific Air Forces (PACAF) or United States Air Forces Europe (USAFE) Air Operations Center (AOC), Air National Guard Readiness Center (ANGRC), Air Force Reserve Command (AFRC) Command Center, theater Air and Space Operations Centers (AOC), Air Mobility Division (AMD), Joint Operational Support Airlift Center (JOSAC), Unit Command Posts, Air Mobility Control Centers (AMCC), Contingency Response Groups (CRG), and Special Tactics Teams (STT). C2 centers are action agents for the MAF commander with execution authority (operational control) over mobility missions/forces.

2.2. Execution Authority. Headquarters commanders with command authority over MAF resources hold execution authority for directed missions. Commanders with execution authority formulate plans, allocate assets, and approve missions through a local command post or C2 element. OG/CCs serve as execution authority for local training missions. The pilot in command will execute missions operating outside normal communication channels (use last known mission orders or best course of action).

2.2.1. Off-Station Trainer (OST). Refer to AMCI 11-208, *Tanker/Airlift Operations,* for procedures and requirements governing OSTs.

2.2.1. **(AETC)** Off-Station Trainer (OST). Reference AETCI 11-207 for OST (Off-Station Trainers - exercises, deployments and competitions) approval authorities and procedures.

2.2.1.1. AFRC Current Operations (AFRC/DOOM) is approval authority for AFRC Unit Equipped (UE) OSTs.

2.3. Pilot in Command (PIC) Responsibility and Authority. SQ/CCs shall designate an aircraft commander (AC), instructor pilot (IP), or evaluator pilot (EP) as the PIC for all flights on a flight authorization form, IAW AFI 11-401, *Aviation Management*, and applicable supplements. An unqualified or non-mission ready pilot may not be designated as PIC. PICs are:

2.3.1. In command of all persons aboard the aircraft.

2.3.2. Vested with authority to accomplish the assigned mission. The PIC shall only fly events authorized in the mission tasking unless, in the PIC‘s judgment, an emergency condition demands otherwise. Fly unscheduled training events [for example, air refueling (AR) or transition training] after obtaining approval of the execution authority.

2.3.3. The final mission authority and will make decisions not assigned to higher authority.

2.3.4. The final authority for requesting or accepting aircrew or mission waivers.

2.3.5. Responsible for passing mission progress reports (at least daily) to C2 agents. If on an Integrated Flight Management (IFM) sortie, contact the flight manager before signing the flight plan, if time and circumstances permit.

2.3.6. Responsible for interaction between aircrew members and mission support personnel and will establish a point-of-contact (POC) with the appropriate C2 agent prior to entering crew rest. Local C2 agents are responsible for coordinating mission support requirements on the PIC's behalf.

2.3.7. Responsible for the welfare of aircrew members, Mission Essential Ground Personnel (MEGP), passengers, and the safe accomplishment of the mission.

2.4. Mission Clearance Decision. The execution authority and PIC shall make the mission clearance decision. In all cases, final responsibility for the safe conduct of the mission rests with the PIC. If a PIC elects to delay a mission, that mission will not depart until the conditions that generated the decision to delay improve or are resolved. Further, no execution authority may task another PIC to take the same mission under the same conditions.

2.4.1. Only re-route or divert a mission when authorized by the execution authority, to resolve an emergency, or if required by en route or terminal weather conditions.

2.4.2. The agent that directed the re-route or divert shall ensure the aircraft is capable of executing departure, en route, and destination arrival procedures.

2.4.3. The PIC will notify the appropriate C2 agent of any aircraft or aircrew limitation that may preclude re-route or divert.

2.4.4. When a C2 agent directs a PIC to fly to an alternate airfield, the agent will ensure existing and forecast weather for the alternate, Notices to Airmen (NOTAMs), and airfield information from the Global Decision Support System (GDSS)/GDSS2/Airfield Suitability and Restrictions Report (ASRR) are suitable. If the alternate becomes unsuitable while en route, coordinate with the C2 agent for other suitable alternates. The PIC is final authority for accepting a suitable alternate. A C2 agent will alert customs and all appropriate ground service agencies to prepare for arrival.

2.5. Operational C2 Reporting.

2.5.1. Stations with MAF C2 agency. Local MAF C2 agents will enter mission data (arrival, departure, and advisory messages) in the MAF C2 system.

2.5.2. Stations without MAF C2 agency. Transmit mission data to the controlling C2 agency by any means available (i.e., DSN, HF, Data Link, SATCOM, iridium phone, etc.). For critical C2 communications (i.e. aircraft waiver request, maintenance delay, etc.), voice communications are the primary method.

2.5.3. En route Reporting.

2.5.3.1. Make the following enroute calls to 618 TACC:

2.5.3.1.1. Airborne call when departing from a location without an AMC presence.

2.5.3.1.2. Maintenance call whenever aircraft alpha status changes to code 3.

2.5.3.1.3. On aeromedical evacuation missions, when patient condition changes or arrival time is greater than plus or minus 30 minutes from scheduled. This call must be made no later than 1 hour prior to landing, to update arrival time.

2.5.3.1.4. Uncoordinated aircraft interceptions via the most expeditious means available, after complying with guidance in the flight information handbook.

Consideration will be given to the phase of flight and aircraft emergencies. When an airborne report is not accomplished, PICs must directly notify 618 TACC upon landing. In all cases ensure local C2 and Intel agencies are informed.

2.5.3.2. CONUS. Periodic ―ops normal" calls/transmissions are not required; however, the controlling C2 agency may increase reporting requirements.

2.5.3.3. OCONUS**.** MAJCOM C2 agencies will specify increased reporting procedures through a communications plan in the OPLAN, OPORD, FRAG, Mission Directive, or FLIP. Aircrews will maintain listening watch in accordance with the communications plan within aircraft equipment capabilities.

2.5.4. Aircraft Status/Maintenance Discrepancy Reporting PICs shall report aircraft system malfunctions that traditionally require extensive trouble shooting as soon as feasible. Contact arrival C2 agency if available, otherwise contact MAJCOM C2 for relay.

2.5.5. Air Refueling Mission Reports**.**

2.5.5.1. Tanker AR Report. On operational missions, pilots will provide the following information after a tanker AR. Under normal circumstances, send only one offload message, completed after the final AR for the mission. Under abnormal circumstances such as receiver diverts, unsuccessful AR, insufficient offload, or anything else that impacts the overall success of the mission, send a report as soon as practical.

2.5.5.1.1. Call Sign**.**

2.5.5.1.2. Fuel offloaded.

2.5.5.1.3. Mission status.

2.5.5.1.4. Next station.

2.5.5.1.5. ETA.

2.5.5.2. Receiver AR Report**.** On operational missions, report the following AR information to the destination C2 agency after landing. C2 agencies will enter the information in the MAF C2 system for missions under their control. The MAJCOM C2 agency will enter the data for all missions. Include all scheduled ARs not accomplished.

2.5.5.2.1. AR track.

2.5.5.2.2. Scheduled Onload.

2.5.5.2.3. Actual Onload.

2.5.5.2.4. Reason Code.

2.5.5.2.5. Additional Comments.

2.5.5.3. Reason Codes**.** Reason codes indicate the outcome of air refueling activity. Codes are normally used when a problem or situation affects the successful accomplishment of the air refueling. The Reason Code ―AC" will be used when air refueling was complete without delay or mission impact. Additional comments are mandatory for all reason codes except AT, WX, and AC.

2.5.5.3.1. RO-Receiver Operations.

2.5.5.3.2. RM-Receiver Maintenance.

2.5.5.3.3. RW-Receiver Weather.

2.5.5.3.4. TO-Tanker Operations.

2.5.5.3.5. TM-Tanker Maintenance.

2.5.5.3.6. TW-Tanker Weather.

2.5.5.3.7. AT-Air Traffic Control.

2.5.5.3.8. WX-Air Refueling Track Adverse Weather.

2.5.5.3.9. AC-Air Refueling Complete.

2.5.6. ―Thirty Minute" Out Call. Transmit a UHF or VHF arrival advisory to the destination C2 agency approximately 30 minutes prior to arrival. Provide Estimated Time in Blocks (ETB).

2.5.7. Integrated Flight Management (IFM) sorties. On IFM sorties, the flight managers (FM) will be the C2 conduit for aviators. For critical C2 communications, voice communications (HF, DSN, SATCOM, iridium phone etc.) are the primary method.

2.5.7.1. Position Reporting on IFM sorties. IFM sorties transiting oceanic flight information regions (FIRs) need to add the phrase ―Pass to Hilda" to ATC voice position reports (N/A for datalink sorties). Crews may also use the ARINC frequencies listed in the aircrew flimsy for C2 phone patch requirements. Use ARINC phone patch only after exhausting normal communication methods.

2.5.8. High Frequency (HF) Communications. HF is the primary means of voice access to the worldwide C2 network. If secure global communications are required, use secure UHF SATCOM or Iridium satellite phone with secure sleeve.

2.5.8.1. The secondary HF radio (if equipped) should be operated to the max extent possible in Automatic Link Establishment (ALE) mode to support voice contacts between the PIC and MAJCOM C2.

2.5.9. SATCOM System (SAT-2000). SATCOM telephone calls are ―FOR OFFICIAL USE ONLY" and calls will only be made when other means of communications have been exhausted and an urgent operational need exists. For more information, refer to the AMC Aircraft Voice INMARSAT CONOPS, **https://private.amc.af.mil/a3/a33/A33O/Publications%20-%20Main.htm**.

2.5.10. DV Messages. Airborne unclassified messages originated by DV passengers may be transmitted at the discretion of the PIC.

2.5.11. Iridium Phone. Iridium phones may be used for communications between aircrews and command and control agencies when beyond-line of sight C2 is required and other line of sight communications, HF or SAT-2000, do not provide proper security or timeliness. For more information, refer to AMC Iridium Satellite Phone CONOPS for Aircrews, **https://private.amc.af.mil/a3/a33/A33O/Publications%20-%20Main.htm**.

2.5.11.1. Turn off Iridium phones within 25 feet of ground refueling operations.

2.5.11.2. Turn off Iridium phones during takeoff, receiver air refueling, approach, and landing. At the discretion of the PIC, the Iridium phone may be left on during tanker air refueling operations.

2.6. Mission Commander (MC).

2.6.1. Unit commanders shall designate a MC when more than two aircraft are assembled to perform missions away from home station. Unit commanders should consider appointing a MC for special, high-visibility missions (i.e. CAPSTONE, DV2, etc.). The MC has overall responsibility and is the final authority for decisions that impact mission execution. The MC shall properly coordinate mission details. For IFM sorties, MC shall coordinate any special mission planning requirements with the IFM mission allocator not later than 24 hours prior to mission execution.

2.6.1.1. For MAJCOM-tasked missions, MAJCOM/A3/DO will coordinate and designate a lead planning agency when more than one unit is involved in an operation. For AMC-tasked missions this responsibility falls to 618 TACC. The OG/CC or equivalent for the lead planning agency will designate a MC. The MC will be a rated (normally field grade) officer qualified in the type mission.

2.6.1.2. For fighter moves, a planner in the tasked unit(s) will coordinate tanker support with Air Combat Command (ACC) Air Operations Squadron (AOS) and provide tanker flight planning based on ACC AOS/AODX produced profile.

2.6.2. During MAJCOM AOS planned moves, the tanker MC is the final authority and shall ensure tanker aircrew members have properly coordinated mission details for the deployment IAW AFI 11-207, *Combat Aircraft Delivery*.

2.6.2.1. The MC will ensure all collocated aircrew members attend required briefings. The MC and all tanker aircrew members will attend the appropriate MAJCOM AOS/Delivery Control Officer (DCO) pre-takeoff briefing. The PIC may excuse boom operators from required briefings to accomplish preflight duties. Cover tanker specific information in the pre-takeoff briefing to coordinate all takeoff, formation, en route, AR, and recovery requirements between tanker and receiver aircraft.

2.6.2.2. When non-collocated, the MC (in conjunction with the lead planning agency) will ensure non-collocated aircrew members receive applicable information, to include rendezvous, formation, abort, and recovery procedures.

2.7. DUAL ROLE Procedures

2.7.1. A valid DUAL ROLE contains the following:

2.7.1.1. A MAJCOM-validated AR requirement. 618 TACC/XOOK must receive validated requirement NLT 14 days before mission start date to ensure proper mission support.

2.7.1.2. A MAJCOM validated and 618 TACC/XOOKP approved user cargo requirement of at least two pallets of cargo, not including baggage.

2.7.2. Since DUAL ROLE is primarily an AR mission, the tanker must first meet the AR requirement without regard to protecting ancillary cargo capability.

2.7.3. AMC does not guarantee DUAL ROLE ancillary cargo movements and will not expend additional tanker sorties or hours for the purpose of moving ancillary cargo.

2.7.4. 618 TACC will normally refuse DUAL ROLE requests that require excessive KC-135 positioning or de-positioning time unless KC-135 aircrew members will receive effective training on positioning and de-positioning legs.

NOTE:
MAJCOM/A3/DO may grant exceptions for missions that do not meet these criteria but reduce total fiscal cost, do not impact other tanker requirements, and present the most practical means available to move cargo. For AFRC and ANG missions, consider unit identified training needs to justify positioning and de-positioning time.

2.8. C2 Agency Telephone Numbers. **Table 2.1** contains a list of 618 TACC phone numbers. Crewmembers may also use the 618 TACC toll-free number, 1-800-AIR-MOBL, to contact other offices within the 618 TACC, including flight managers.

Table 2.1. 618 TACC Mission Controller Phone Numbers.

TYPE OF MISSION	TACC PHONE NUMBER (Country code 312)
Contingency and Air Refueling	DSN 779-0320
Channel	DSN 779-0321
JAATT	DSN 779-0322
SAAM and Exercise	DSN 779-0323
All Other	DSN 779-0324

2.9. Close Watch Missions. Close Watch missions (for example, Combat Search and Rescue (CSAR); Aeromedical Evacuation (AE), PHOENIX BANNERs) receive special C2 attention. PICs will promptly notify appropriate C2 agency of delays, aborts, or other events that affect on-time departure. Provide the C2 agent the estimated time in commission (ETIC), planned ETD, and estimated time of arrival (ETA) within 10 minutes of the event or as soon as safety allows.

2.10. Law Enforcement Support. It is the policy of the Department of Defense (DOD) to cooperate with civilian law enforcement officials to the maximum extent practicable. AFI 10-801, *Assistance to Civilian Law Enforcement Agencies*, provides the policies and procedures service members must follow when supporting federal, state, and local civilian law enforcement agencies. Coordinate all civilian law enforcement authorities‘ requests for assistance through appropriate C2 channels.

2.11. Enroute Maintenance Support. 618 TACC/XOCL will support all mobility aircraft requests for parts and/or maintenance assistance regardless of type of mission or component. Refer to paragraph **2.8** for 618 TACC telephone numbers.

Chapter 3

AIRCREW COMPLEMENT/MANAGEMENT

3.1. General. This chapter provides guiding principles to form/manage mobility aircrews. Commanders at all levels shall follow these policies to form aircrews and to develop aircrew-related work/rest schedules that optimize efficiency of mobility forces engaged in worldwide operations.

3.2. Aircrew Complement. SQ/CCs shall form aircrews based on fragmentation order/mission directive, Crew Duty Time (CDT) and Flight Duty Period (FDP) requirements, aircrew member qualifications, Operational Risk Management considerations, and other constraints to safely accomplish the mission tasking. **Table 3.1** summarizes crew position requirements for different crew types.

3.2.1. The minimum crew member complement for a local training flight is an aircraft commander and a pilot/copilot, plus one crew member trained in additional required checklist duties (e.g. alternate gear and flap lowering, downlock removal, etc.).

3.2.2. SQ/CCs shall form augmented aircrews for missions planned to take longer than a basic CDT. Augmenting aircrew members must be current, qualified, and Mission Ready (MR) IAW AFI 11-2KC-135, Vol 1. ***EXCEPTIONS:*** A Non-Mission Ready (NMR) pilot may augment provided the other two pilots are MR IPs. A NMR BO may be used as an augmentee if accompanied by a MR instructor BO. The NMR BO must be qualified to perform the required mission (i.e., cargo qualified, fighter qualified, etc.) or else be supervised by the instructor BO during all portions of the mission for which he/she is not fully qualified. SQ/CC shall augment an aircrew for the full Flight Duty Period (FDP). The MAJCOM/A3/DO may augment aircrews while the flight is underway (see paragraph **3.11** for more on CDT/FDP).

Table 3.1. Aircrew Complement.

Crew Position	Basic Crew	Augmented Crew
Aircraft Commander	1	2
Pilot/Copilot/PIQ	1	1
Basic Navigator SOAR Navigator (SOAR Mission)	0 1	0 2
Boom Operator	1 (See Notes 1,2)	2 (See Note 2)

NOTE:

1. An additional BO should be included for scheduled cargo operations.

2. An additional crew member certified by SQ/CC in passenger handling, must be assigned to the mission when more than 10 passengers (Space A/MEGP/Duty Pax) are carried. Up to three dedicated crew chiefs do not count against the number of passengers.

3. A basic navigator may be added to an augmented crew (non-SOAR mission) (N/A ANG). In this case, the PIC will determine a work/rest plan that affords the navigator sufficient rest periods during the mission.

3.3. Aircrew Member Qualification. An aircrew member will be qualified, or in qualification training, to perform duties as a primary aircrew member.

3.3.1. Senior leaders who complete a Senior Staff Qualification course (restricted AF Form 8) or orientation for a Senior Staff Familiarization flight may occupy a primary crew position when under direct instructor supervision. Refer to AFI 11-401, Aviation Management, for procedures and requirements governing senior leader flying.

3.3.2. Crewmembers who complete the Senior Staff Course will log ~~"F~~P/FN" for Flight Authorization Duty Code on the AFTO Form 781, **ARMS Aircrew/Mission Flight Data Document**.

3.3.3. Crewmembers who complete a Senior Staff Familiarization flight will log ~~"O~~P/ON" for Flight Authorization Duty Code on the AFTO Form 781, **ARMS Aircrew/Mission Flight Data Document**.

3.4. Pilots. An instructor pilot (IP) must supervise non-current or unqualified pilots regaining currency or qualification (direct IP supervision during critical phases of flight).

3.4.1. SQ/CCs shall augment the PIC for missions over 16 hours Flight Duty Period (FDP) and designate those additional pilots authorized to perform PIC duties. The PIC shall brief the aircrew on the plan to transfer PIC duties.

3.4.2. Missions With Passengers. Only current and qualified pilots (possessing an AF Form 8, **Certificate of Aircrew Qualification**) will occupy pilot seats with passengers on board.

3.4.2.1. A non-current but qualified pilot may fly with passengers on board if under direct IP supervision.

3.4.2.2. Pilots shall not fly touch-and-go landings with passengers or hazardous cargo on board. Touch-and-go landings and stop-and-go landings are authorized with Mission Essential Ground Personnel (MEGP) on board.

3.4.3. ACs may perform receiver AR from the right seat when authorized by SQ/CC and while under direct IP supervision.

3.5. Navigators. A non-current or unqualified navigator may serve as a primary aircrew member on any mission when supervised by a qualified instructor navigator (N/A ANG). An IP may supervise navigators regaining currency on non-SOAR missions (NA/ANG).

3.6. Boom Operators. A non-current or unqualified BO may serve as a primary aircrew member on any mission when supervised by a qualified instructor BO (direct supervision for critical phases of flight).

3.7. Aircrew Management. SQ/CCs and en route C2 agents shall ensure work/rest cycles permit an aircrew adequate time to safely accomplish mission duties and personal time for rest.

3.7.1. Flight Duty Period (FDP). FDP is the period of time starting at mission report time and ending immediately after the aircrew completes the final engine shutdown of the day. SQ/CCs shall form aircrews based on worst-case FDP in the mission directive. Once en

route, the mission directive or C2 agent will inform the PIC of expected FDP at show time. Reduce FDP when the autopilot altitude hold fails or FMS cannot be coupled to the autopilot after departure IAW information below. If the autopilot fails after departure, consider mission requirements and determine the best course of action to preclude further mission delays due to reduced FDP. The best course of action may include diverting to an airfield with maintenance capability. Contact C2, coordinate intentions, and comply with limitations.

3.7.1.1. Basic Crew FDP**.** The maximum FDP for a basic aircrew is 16 hours (12 hours when the autopilot altitude hold is inoperative or the autopilot cannot be coupled to the FMS). Once an aircrew begins a basic FDP, only MAJCOM/A3/DO may extend to augmented day regardless of aircrew composition (MAJCOM/A3/DO shall augment basic crew to extend FDP).

3.7.1.1.1. When extended en route ground times, non-optimum routing/winds, weather delays or other extenuating circumstances will increase a basic to an augmented FDP, a PIC with an augmented crew may accept an augmented FDP as long as:

3.7.1.1.1.1. The C2 agent or PIC discovers the extenuating circumstances before the first takeoff of the day.

3.7.1.1.1.2. The PIC verifies all augmenting aircrew members can get adequate rest en route.

3.7.1.1.2. A PIC with a basic crew may seek MAJCOM/A3/DO (mission execution authority) approval to extend the FDP as much as 2 hours to complete a scheduled mission. Only use this provision to recover from unscheduled/unplanned en route delays. C2 agents shall not ask a PIC to exercise this option.

3.7.1.2. Augmented Crew FDP**.** Maximum FDP for an augmented aircrew is 24 hours (16 hours when the autopilot altitude hold is inoperative or the autopilot cannot be coupled to the FMS).

3.7.1.2.1. SQ/CC will augment an aircrew when FDP exceeds 16 hours and the mission profile will allow augmenting aircrew members adequate time to rest en route. As a minimum, the mission profile must provide the following:

3.7.1.2.1.1. No more than 4 intermediate stops total. No more than 2 intermediate stops after 16 hours of FDP.

3.7.1.2.1.2. Mission profile shall include at least one 6 hour leg or two 4 hour legs.

3.7.1.2.1.3. The PIC shall validate planned leg times based on actual conditions. PICs may swap an extended ground time (4 hours) for a mission leg when conditions afford aircrew members a chance for rest.

3.7.1.3. Flight examiners administering evaluations will not exceed an augmented FDP.

3.7.1.4. Training and Functional Check Flights/Acceptance Check Flights (FCFs/ACFs) FDP:

3.7.1.4. **(AETC)** Training and Functional Check Flights/Acceptance Check Flights (FCFs/ACFs) FDP: Reference AFI 11-202V3 AETC Sup for student training requirements.

3.7.1.4.1. Maximum FDP for training and FCF/ACF missions is 16 hours (12 hours when the autopilot altitude hold is inoperative or the FMS cannot be coupled to the autopilot).

3.7.1.4.2. Complete all mission-related events (i.e., FCF/ACF checks, air refueling events, transition events, or tactical events) during the first 12 hours of the FDP.

3.7.1.4.3. ANG and AFRC crewmembers may perform mission-related events on local training missions provided their time from start of duty does not exceed 16 hours and actual flight duty does not exceed 12 hours.

3.7.1.4.3.1. Crew duty time (CDT) and FDP include both military duty and civilian work. CDT and FDP begin when an individual reports for their first duty period (military or civilian).

3.7.2. Crew Duty Time (CDT). CDT is that period of time an aircrew may perform combined ground/flight duties. Plan the mission so aircrew members may complete post-mission duties within maximum CDT. An aircrew member may perform mission-related duties for other missions when approved by member‘s home station SQ/CC or equivalent. Maximum CDT is 18 hours for a basic aircrew and 24+45 hours for an augmented aircrew.

3.7.3. Except as outlined below, CDT/FDP begins 1 hour after aircrew alert notification. SQ/CC or equivalent may task aircrew members to perform other duties before they begin flight-related duties or MAJCOM/A3/DO may authorize a C2 agent to alert an aircrew member early: begin CDT/FDP when the first aircrew member reports for those duties.

3.7.3.1. For self-alerts, the PIC shall coordinate early individual/crew mission report times with C2 agents. Begin CDT/FDP when the first aircrew member reports for duty.

3.7.3.2. CDT/FDP Extensions**.** See AFI 11-202V3, *General Flight Rules.*

3.7.4. Deadhead Time**.** IAW AFI 11-401, *Aviation Management,* deadhead time is the time computed traveling in passenger status. MAF aircrew members may deadhead for the purpose of positioning or de-positioning to perform a mobility mission or mission support function. Crewmembers may deadhead for a maximum of 24 hours. OG/CC or equivalent may approve crewmembers to deadhead in excess of 24 hours.

3.7.4.1. Current/qualified aircrew members may perform primary aircrew duties after deadheading, provided they do not exceed a basic FDP (FDP starts at report time for deadhead flight).

3.7.4.2. Aircrew members may deadhead after performing primary crew duties, for a maximum of 24 hours from the time the crewmember‘s FDP began.

3.7.5. Aircrew Member Support of Aircraft Generation Activities (Pre-flight, cargo up-/offload, start, and taxi aircraft). Crew rest is required IAW AFI 11-202V3, Chapter 9. The duty day begins when the aircrew member reports for official duties.

3.8. Scheduling Restrictions. In accordance with Chapter 9 of AFI 11-202V3, SQ/CCs shall not schedule an aircrew member to fly nor will an aircrew member perform aircrew duties:

3.8.1. When the flight will exceed maximum flying time limitations of AFI 11-202V3.

3.8.2. Within 12 hours of consuming alcoholic beverages (based on scheduled takeoff or ALFA standby force legal for alert time, or earliest show time from BRAVO alert) or while impaired by its after effects.

3.8.3. When using nasal sprays to treat symptoms of head congestion existing before flight. An aircrew member may use oxymetazoline or phenylephrine nasal sprays as ―get-me-downs" following an unexpected ear or sinus block during flight.

3.9. Counter-Fatigue Management Program.

3.9.1. Aircrew may use medications with prior approval (on a voluntary basis following ground testing) that enhance natural rest during off-cycle crew rest periods. This section provides AMC/A3/DO guidance for the use of no-go pills (prescription medications) that help aircrew initiate and maintain restful sleep during off-cycle (desynchronosis) crew rest periods. Fliers on augmented aircrews shall not use no-go pills in flight.

3.9.2. It is USAF policy that aircrew shall never use no-go pills as a first choice counter-fatigue management tool.

3.9.3. Responsibility for counter-fatigue management of aircrew medicinal products rests with the home station Flight Surgeon (FS), OG/CC (may delegate to but no lower than squadron commander), and with each individual aircrew member. During extended deployments, aircrew members will only obtain no-go pills from a deployed USAF FS. The deployed flight surgeon shall consult with the home unit medical team prior to dispensing no-go pills to deployed fliers.

3.9.4. Unit Operational Risk Management (ORM) programs shall include use of no-go medication with OG/CC and FS oversight. A basic counter fatigue ORM model is available for mission planners, OG/CC, crew, and FS on the AMC/A3V website.

3.9.5. Home station or deployed FS trained using the AMC/SG-approved (lead command) counter fatigue program is the point of contact for no-go prescription. Upon request, the FS will advise/assist the local OG/CC to identify missions that may impair crew rest caused by duty day length, departure and arrival times, and other mission timelines.

3.9.6. Aircrew members on Personnel Reliability Program (PRP) status will follow PRP notification procedures if prescribed no-go pills.

3.9.7. (N/A ANG/AFRC)The OG/CC shall establish a system to inform the FS when missions fall into any of the following categories (may cause sleep disruptions and are therefore candidates for no-go medications):

3.9.7.1. Home station night launch missions greater than four hours duration.

3.9.7.2. Crew rest facilities lacking an optimal sleeping environment (quiet, cooled, and darkened).

3.9.7.3. Off-station missions that are 4 or more time zones from home station.

3.9.7.4. Rotating schedules with greater then 6-hour flight time duration.

3.9.7.5. Missions that run consistently near a 14-hour (or greater) duty day.

3.9.8. SQ/CC will not schedule crewmembers to fly or perform crew duties within 12 hours of consuming no-go pills (consider DNIF). Exception: commanders may reduce the 12-hour timeline after consult with a flight surgeon to confirm prescribed no-go pills have short duration effect. In no case will crewmembers consume a no-go pill on a timeline where they would be under the effect of the medication while they perform aircrew duties (use mission report or legal for alert time to determine latest time to take no-go medication).

3.9.9. Aircrew member‘s responsibilities:

3.9.9.1. Aircrew members will complete ground testing for no-go pills and receive FS clearance prior to using no-go pills in the operational environment.

3.9.9.2. Aircrew members shall not operate equipment within 12-hours after consuming a no-go pill.

3.9.9.3. Aircrew members shall not take no-go pills within 12 hours of consuming alcohol.

3.9.9.4. Aircrew will inform the FS of any other medications (including nutritional supplements and over the counter medications) they are taking so the FS can evaluate potential interactions.

3.9.9.5. Limit use of Restoril (Temazepam) and Ambien (Zolpidem) to a maximum of seven consecutive days and no more than 20 days in a 60-day period.

3.9.9.6. Limit use of Sonata (Pyrazolopyrimidine) to a maximum of 10 consecutive days and no more than 28 days in a 60-day period.

3.10. Crew Rest/En route Ground Time. OG/CCs shall establish procedures to place crewmembers in crew rest.

3.10.1. Home-Station Pre-Departure Crew Rest. For missions that will keep aircrew members off station 16 hours or more, unit commanders will enter primary and deadhead aircrew members into pre-departure crew rest 24 hours before the legal for alert time. Aircrew members may perform limited non-flying duties like mission planning during the first 12 hours of pre-departure crew rest. OG/CCs may waive any portion of the first 12 hours of pre-departure crew rest. Do not manifest deadhead aircrew members as passengers to deny pre-departure crew rest. ***EXCEPTION:*** AFRC, ANG, and AETC in accordance with AFI 11-202V3 and appropriate supplement.

3.10.2. Off-station/En route Crew Rest. The minimum en route crew rest period is 12 hours before legal for alert or scheduled report time when self-alerting.

3.10.2.1. Except during emergencies or as authorized by MAJCOM/A3/DO, C2 agents shall not disturb an aircrew member in crew rest. When necessary to interrupt aircrew members‘ crew rest period, re-enter that aircrew in a subsequent minimum 12 hour crew rest period after they complete official duties.

3.10.2.2. Do not enter aircrew members into crew rest until they complete official post-flight duties. Those duties may include, but are not limited to, refueling, cargo on-/offload, aircrew arming, minor maintenance, or mission debriefing.

3.10.3. Off-station/En route Ground Time. Mobility planners shall provide aircrews at least 17 hours ground time between engine shutdown and subsequent takeoff.

3.10.3.1. Mission planners, PICs, or C2 agents may modify ground time as follows:

3.10.3.1.1. In the interest of safety.

3.10.3.1.2. To start (mission reporting time) no earlier than 12 hours from the time the aircrew entered crew rest. Before reducing ground time, PICs will consider time to complete mission planning, cargo up-/offload, and non-standard mission related duties. C2 agents will not ask PICs to accept less than 17 hours ground time.

3.10.3.2. Mobility planners should construct mission itineraries with en route ground times longer than 17 hours to afford aircrew members opportunities to recover from the cumulative affects of fatigue caused by flying on several consecutive days or due to transiting several time zones. If practical, make the en route ground time 36 hours (maximum) after three consecutive near maximum FDPs.

3.10.4. Crew Enhancement Crew Rest (CECR). CECR is not an alternative to a safety-of-flight delay but provides PICs a means to minimize the adverse effects of a crew alert and report period outside normal duty time. CECR periods will be of minimum duration. Tasking authorities will approve requests to delay alert time to normalize the work-rest cycle or increase messing options when mission allows. When requests are disapproved, the C2 agent will inform the PIC of the reason for disapproval.

3.10.5. Post-Mission Crew Rest (PMCR). SQ/CCs shall give aircrew members returning to home base sufficient time to recover from cumulative effects of the mission and tend to personal needs. PMCR begins upon mission termination. (N/A ANG, AFRC and AETC).

3.10.5. **(AETC)** Post-Mission Crew Rest (PMCR). PMCR for AETC aircrew members is not normally authorized. However, PMCR is at the discretion of the Sq/CC.

3.10.5.1. For missions that keep an aircrew off station 16 or more hours, the SQ/CC shall provide 1 hour (up to 96 hours) PMCR for each 3 hours off-station. Do not enter aircrew members in pre-departure crew rest until the PMCR period expires.

3.10.5.2. PMCR is not applicable to continuing missions and MAJCOM/A3/DO may suspend PMCR during contingency operations.

3.10.5.3. OG/CCs (or equivalents) are PMCR waiver authority.

3.10.6. Crew Chief (CC) Work/Rest Plan. While on Temporary Duty (TDY), the deployed FCC or MEGP maintenance technician shall report to the PIC. In conjunction with enroute/transient maintenance supervisor, the PIC will determine how long the crew chief can safely perform aircraft maintenance duties. The PIC shall ensure the CC has sufficient time in each 24-hour period to get 8 hours of uninterrupted rest. See AFI 21-101, *Maintenance Operations and Management Policy*, for detailed guidance.

3.10.7. The lead USAF component will publish MAJCOM/A3/DO-approved crew rest criteria in the Exercise or Contingency Operation Order (OPORD), Operation Plan (OPLAN) or Concept of Operations (CONOPs).

3.10.8. The Prime Knight program streamlines the process of getting aircrews from aircraft parking ramp into lodging/crew rest. It is only successful when billeting agents receive accurate aircrew/mission information in a timely manner.

3.10.8.1. C2 Agent Responsibilities. A MAJCOM C2 agent will forward information on the departing aircrew‘s orders to a point of contact (POC) for the next crew rest location‘s Prime Knight function.

3.10.8.2. PIC Responsibilities. If departing from a location with a C2 agency, ensure a C2 agent has accurate aircrew/mission information to forward to the next Prime Knight POC. If departing from a facility without a C2 agency, the PIC will call the next crew rest location Prime Knight POC to pass aircrew/mission information.

3.10.8.3. SQ/CC or designated authenticating official shall ensure TDY/Flight orders clearly indicate the unit fund cite so that the PIC may make Prime Knight reservations in advance. Without a unit fund cite on the TDY/Flight orders, the PIC must make advance reservations using a government travel card to participate in the Prime Knight program.

3.11. Alerting Procedures. MAJCOM C2 agents shall establish a legal for alert time with the PIC and when appropriate, the Medical Crew Director (MCD) of Aeromedical Evacuation (AE) crews. Whenever possible, C2 agents will inform PICs and MCDs of aircraft status, expected patient up load time, and other pertinent mission details that will streamline mission launch.

3.11.1. Aircrew alert time is normally 4+l5 hours before scheduled takeoff time (allows 1 hour for reporting and 3+l5 hours for mission preparation). Individual locations may increase or decrease this time depending on specific capabilities. OG/CCs may establish self-alert procedures for local training missions.

3.11.1.1. For missions with more than minimum ground time, the PIC may arrange an alert time that provides additional preparation time to accomplish the mission. The PIC may also accept alerting with reduced preparation time when the mission allows. In all cases, the PIC shall coordinate changes to standard alerting times with the appropriate C2 agency.

3.11.1.2. With PIC agreement and when cargo load warrants, C2 agents may alert boom operators up to 2 hours before normal alert time. When early alerting is warranted, the PIC and C2 agent must notify the BO before he/she enters crew rest. Do not alert the BO more than 1 hour before beginning cargo up load. Base the aircrew FDP on the BO‘s show time.

3.11.1.3. C2 agents shall not alert an aircrew until the aircraft is in commission or there is reasonable assurance that maintenance technicians will complete repairs that allow the aircrew time to pre-flight and load the aircraft to meet the target takeoff time.

3.11.1.4. C2 agents shall not alert outbound crews when inbound aircraft is on A-2 or A-3 status until maintenance technicians determine required parts are available and the aircraft will be repaired within the target ground time.

3.11.1.5. Self-Alerts**.** Crews will self-alert at locations without a C2 agency, but must coordinate with controlling C2 agency. The PIC may elect to self-alert on operational missions at locations with a C2 agency. Coordinate the alert time with local C2 agents to avoid FDP limitations that result from unexpected changes in the mission.

3.11.2. The aircrew release policy is as follows:

3.11.2.1. On the aircrew‘s initial entry or re-entry into crew rest, the controlling C2 agent, or PIC during self-alerts, will establish an expected alert time.

3.11.2.2. For all missions, the latest allowable alert time is 6 hours after the expected alert time. The PIC may extend that window to 8 hours when flying as primary crew or 12 hours when deadheading. The controlling C2 agent will not ask the PIC to accept more than the 6 hour window. ANG/ AFRC aircrew members may extend the window as necessary to deadhead to home station to meet the Firm Scheduled Return Time (FSRT).

3.11.2.3. When a C2 agent determines circumstances will not allow for aircrew alerting during the legal for alert window, at that time but not earlier than the expected alert time, the C2 agent will contact the PIC and establish a new expected alert time at least 12 hours from the time of notification.

3.11.2.4. At the end of the legal for alert window or if the mission risk becomes elevated and the aircraft commander determines the overall risk of the mission prohibits safe continuation, he/she will contact a C2 agent and establish a new expected alert time.

3.11.2.4.1. **(Added-AETC)** If the aircrew is not airborne within 4 hours after scheduled departure time, the training sortie will be canceled and the crew rescheduled. However, the PIC may request a 2 hour extension (up to 6 hours). That extension must be approved by the OG/CC.

3.12. Stage Management

3.12.1. Stage Posture. Stages operate on a positive launch principle. C2 agents shall alert aircrews using the following priority/hierarchy:

3.12.1.1. Aircrews that require an emergency return to home station.

3.12.1.2. De-positioning stage crews will be prioritized by their SRTs.

3.12.1.3. Aircrews in sequence of arrival time.

3.12.1.4. If the stage manager returns an aircrew in the stage to crew rest because of a mission delay or abort, that aircrew becomes first out when legal for alert.

3.12.2. Mechanical Stage**.** A C2 agent may create a mechanical stage when a delayed or aborted mission will not resume before that aircrew‘s FDP expires. Aircrews in a mechanical stage will be first out when a mission in the same direction transits their location while they are legal for alert. A C2 agent may bump an inbound aircrew with FDP to complete that mission to cycle aircrews in a mechanical stage. C2 agents should not normally establish a mechanical stage for ANG and AFRC crews flying unit-equipped aircraft.

3.13. Standby Force Duty. MAJCOM C2 Agents shall task units for Standby Force Duty not later than 18 hours prior to legal for alert time. This allows crewmembers 12 hours of pre-standby crew rest and 6 hours for aircraft pre-flight duty. When aircrews are unable to complete all preflight duties within 6 hours of crew show time, provide an additional 12-hour pre-standby crew rest. If MAJCOM C2 agents are unable to provide 18 hours prior notification, SQ/CC shall place the pre-standby crew in 12 hour crew rest and follow aircraft generation procedures in paragraph **3.7.5** to prepare the aircraft for launch. SQ/CC may keep an aircrew in ALFA/BRAVO status up to 48 hours. MAJCOM/A3/DO may extend this period for contingencies. After 48 hours, launch, release, or re-enter aircrew into 12 hour pre-departure crew rest. OG/CCs may provide additional local procedures for management of Standby Force Duties.

3.13.1. ALFA Standby Aircraft Preflight Generation and Security. When tasked, SQ/CC shall posture an aircraft and aircrew as an ALFA Standby Force able to launch within 1 hour. The following procedures apply to primary aircraft as well as spare aircraft generated for ALFA alerts. A maintenance Dash -6 and aircrew Dash -1 preflight must be completed. Preflight validity will be in accordance with applicable T.O. After the preflight, the PIC will notify the controlling agency. The aircraft will remain in a sealed posture and be referred to as ~~"~~cocked on alert". Documentation of when the aircraft was cocked on alert must be placed in the forms. The PIC will ensure the aircraft is secure before entering crew rest. Secure all hatches and doors to show unauthorized entry. Close the crew entrance door and seal in a manner which will prevent entry without damage to the seal. The aircrew preflight portion remains valid if performed by one crew, cocked on alert, and launched by another crew. Uncocking a generated aircraft is not a standard procedure but may be accomplished on a case by case basis. The PIC or a designated aircrew representative must be present if access to the aircraft is required. Ensure command and control and the controlling agency are notified when uncocking and recocking generated aircraft. Follow-on pre-flights done during normal waking hours do not interrupt crew rest. Begin CDT/FDP when C2 agent directs the aircrew to launch from crew rest or while performing pre-flight (begin CDT/FDP when the aircrew arrived at the aircraft to do the pre-flight).

3.13.2. BRAVO Standby Force. When tasked, SQ/CC shall posture an aircraft and/or aircrew in BRAVO Standby Force to permit launch within 3 hours. Follow-on pre-flights, if required, interrupt crew rest. Begin CDT/FDP when aircrew shows for duty.

3.13.3. CHARLIE Standby Force. When tasked, SQ/CC shall posture aircrews as a CHARLIE Standby Force ready to enter crew rest within 2 hours. Tasked aircrews will be legal for alert 12 hours after entering crew rest. SQ/CC may keep aircrews in CHARLIE status up to 72 hours. After 72 hours, release aircrews from CHARLIE Standby or enter them into 12 hours crew rest for directed mission, training mission, or subsequent standby force duty.

3.13.4. Wing Standby Force. OG/CC may place aircrews in Wing Standby status. After a 12 hour pre-departure crew rest period, aircrews are legal for alert for 12 hours and must be able to launch within 3+15 hours. After 12 hours, launch, release, or re-enter aircrews in 12 hour crew rest period before subsequent 12 hours Wing Standby duty.

3.13.5. Post-Standby Missions. On completion of standby duty, aircrew members may be dispatched on a mission. If started, post-standby crew rest must be completed before the start of pre-departure crew rest. If an aircrew member is dispatched on a mission, compute the post-mission crew rest time on standby time plus mission time.

3.13.6. Post Standby Crew Rest. Aircrew members not dispatched on a mission following standby duty will receive post-mission standby crew rest as follows:

3.13.6.1. If standby duty is performed away from normal quarters, crew rest time is computed from this standby time on the same basis as for mission time.

3.13.6.2. If standby duty was performed in normal quarters, no crew rest time is authorized.

3.14. Orientation Flights and Incentive Flights. Refer to DoD 4515.13-R, *Air Transportation*, AFI 11-401, and the appropriate MAJCOM supplement.

3.15. Interfly. Interfly is a temporary arrangement between OG/CCs or equivalent to permit the exchange or substitution of aircrew members and/or aircraft between mobility units to accomplish flying missions. Interfly will be limited to specific operations, exercises, or special circumstances. However, it may be used for events of longer duration such as unit conversion to another model design series (MDS). AFRC/A3 has delegated interfly approval authority to unit OG/CCs for active duty/ANG interfly with AFRC and AFRC to AFRC interfly. Units utilizing this authority will inform AFRC/A3V. NGB/A3 has delegated approval authority to Wing Commanders for active duty/AFRC interfly with ANG, and OG/CC approval authority for ANG to ANG interfly. ANG units will ensure appropriate active duty General Officer support staff has notified the Air Force Directorate of Personnel General Officer Management Office (AF/DPG) prior to any active duty General Officer flying with their unit. Participating aircrews will use guidelines established by the host command or as specified in the OPLAN or CONOPS. ***EXCEPTION*:** AE crewmembers are exempt from interfly requirements. Conduct interfly operations as follows:

3.15.1. Aircrew members shall be current and qualified in the MDS, as well as unique systems or configuration required to fly the aircraft/mission.

3.15.2. Each affected group commander who commits resources (personnel or aircraft) must concur with interfly proposal.

3.15.3. MDS conversion training.

3.15.3.1. Units may request an interfly agreement for duration of their conversion. OG/CCs will forward interfly requests to individual OG/CCs for approval. Requests will include as a minimum a list of effected units, duration of the agreement, and purpose.

3.16. Additional Crewmembers (ACM). Crewmembers qualified in mobility aircraft are authorized ACM status on any mobility aircraft to pre/de-position in support of mobility operations. MAJCOM designated crewmembers who are assigned or authorized to accompany the normal crew compliment are allowed ACM status.

3.16.1. Crewmembers in ACM status are not authorized to:

3.16.1.1. Displace manifested passengers.

3.16.1.2. Maintain currency and/or log flying time.

3.16.1.3. Use for transportation while on leave.

EXCEPTION:
ANG/AFRC Air Technicians may be in a civilian leave status while traveling en route to perform in a military duty status.

3.16.1.4. Travel on Special Air Missions/Command Support Mission (SAM/CSM) aircraft unless authorized by HQ AF/CVAM through the PIC.

3.16.1.5. Travel on Special Assignment Airlift Missions (SAAM) when specifically restricted by the mission directive (Form 59).

3.16.1.6. Travel on Operational Support Airlift (OSA) aircraft unless authorized by Joint Operational Support Airlift Command (JOSAC) through the PIC.

3.16.2. All ACMs require valid travel/flight orders or supporting message authorizing ACM status. OG/CCs may authorize ACM status for their mobility aircrews.

3.16.3. Flight evaluators have priority and will not be displaced by any other ACM. The priority for evaluators is MAJCOM, NAF, group, and then squadron level.

3.16.4. ACMs normally travel in the crew compartment. If the number of ACMs desiring travel exceeds the capacity of the crew compartment, the C2 agency will notify the ATOC, who in turn will coordinate with the passenger terminal; seats not previously assigned may be used for ACMs.

3.16.5. The PIC or designated representative, will brief ACMs on seat assignment, appropriate mission information, emergency procedures including egress, and armed crewmembers. The PIC may assign an ACM aircrew-related duties for which the ACM is qualified.

3.16.6. ACMs will coordinate their travel with the appropriate C2 agency prior to travel. They will process through the C2 agency as early as possible but NLT 3 hours prior to planned block time.

3.17. Mission Essential Ground Personnel (MEGP). Procedures and policies regarding MEGP are contained in AFI 11-401 and AMCI 11-208. PICs will ensure personnel traveling in this status are properly authorized.

3.18. Mission Mobility Observers (MMO). MAJCOM supplements or additional directives may establish programs authorizing senior military and civilian personnel to fly for mobility mission familiarization. For AMC MMO information reference AMCI 11-208.

Chapter 4

AIRCRAFT OPERATING RESTRICTIONS

4.1. Objective. Redundant systems may allow crews to safely perform some missions when a component/system is degraded. The PIC is the final authority in determining the overall suitability of an aircraft for the mission. The PIC will ensure a detailed explanation of the discrepancy is entered in the AFTO Form 781A, **Maintenance Discrepancy and Work Document**; include the following maintenance identifiers to effectively communicate aircraft status.

4.1.1. Mission Essential (ME). The PIC will designate an item, system, or subsystem component essential for safe aircraft operation as ME.

4.1.2. Mission Contributing (MC). The PIC will designate an item, system, or subsystem component, which is not currently essential for safe aircraft operation as MC. These discrepancies should be cleared at the earliest opportunity. If circumstances change or mission safety would be compromised, re-designate as ME. Do not delay a mission to clear a MC discrepancy.

4.1.3. Open Item (OI). The PIC will designate discrepancies not expected to adversely impact the current mission or any subsequent mission as an OI. These items are normally cleared at home station.

4.2. Minimum Equipment List (MEL) Policy. The MEL is a pre-launch document that lists the minimum equipment/systems to operate the aircraft. It is impractical to prepare a list that would anticipate all possible combinations of equipment malfunctions and contingent circumstances. Consider equipment/systems with no listed exceptions as grounding items without proper waiver authority. A PIC who accepts an aircraft with degraded equipment/systems is not committed to subsequent operations with the same degraded equipment. PICs are not committed to operations with degraded equipment accepted by another PIC.

4.2.1. The PIC shall account for the possibility of additional failures during continued operation with inoperative systems or components. The MEL is not intended for continued operation over an indefinite period with systems/subsystems inoperative.

4.2.2. All emergency equipment will be installed unless specifically exempted by mission requirements/directives.

4.2.3. Waiver Policy. A PIC prepared to operate with a degraded MEL item shall request a waiver through C2 channels. The PIC shall provide the C2 agent: 1) nature of request, 2) individual crew member qualification, 3) mission leg(s) requiring the waiver, and 4) the governing directive(s) of waiver request to include volume, chapter, or paragraph. Initiate waiver requests as soon as possible; plan at least a 1-hour waiver process time.

4.2.4. PICs operating with waiver(s) for degraded equipment shall coordinate mission requirements (i.e., revised departure times, fuel requirements, maintenance requirements, etc.) with the controlling C2 agency and/or flight manager.

4.2.5. If beyond C2 communication capability, or when it is necessary to protect the crew or aircraft from a situation not covered by this chapter and immediate action is required, the PIC may deviate according to paragraph **1.4**. Report deviations (without waiver) through channels to MAJCOM/A3/DO within 48-hours. OG/CCs shall collect background information and submit a follow-up written report upon request.

4.2.5. **(AETC)** Report deviations (without waiver) through command channels to AETC/A3V within 48-hours. OG/CCs shall collect background information and submit a follow-up written report upon request.

4.3. Waiver Protocol. Waivers to operate with degraded equipment are granted on a case-by-case basis. The PIC determines the need for a waiver after coordinating with the lowest practical level of command. MEL waiver authority is as follows:

4.3.1. Training Missions. OG/CC or equivalent with mission execution authority.

4.3.2. MAJCOM Directed Missions. MAJCOM/A3/DO with mission execution authority for active duty, AFRC, or ANG units flying MAJCOM-directed missions (includes Operational Readiness Inspections). Initiate the request with MAJCOM C2 agency. For AMC-directed missions contact HQ AMC/A3V through 618 TACC.

4.3.2.1. **(Added-AETC)** AETC directed missions (other than local student training) and to include Consolidated Unit Inspections. AETC/A2/3/10 is the waiver authority. The MEL waiver authority has been delegated to AETC/A3V.

4.3.3. Contingency Missions. DIRMOBFOR (or equivalent) for the agency with C2, if not specified in the OPORD/Tasking Order.

4.3.4. ANG or AFRC Directed Missions. ANG or AFRC maintains C2 and waiver authority for ANG or AFRC directed mission prior to mobilization. NGB/A3 delegates waiver authority to the unit OG/CC.

4.3.5. Other Than MEL Waivers. Determine governing source document (i.e. AFI, Flight Manual, Maintenance T.O., etc.) to ascertain the waiver authority. Use C2 channels to notify the appropriate waiver authority. Waivers of this nature may require an extended response time.

4.3.6. Engineering Dispositions (ED). Dispositions are requested when aircraft are damaged and/or established maintenance technical order procedures cannot be followed or do not exist. The on-site maintenance authority is responsible for requesting EDs. Most EDs allow maintenance to repair the aircraft and return it to unrestricted status; dispositions of this nature do not concern aircrews. However, EDs affecting aircrew operations require MEL waiver authority approval.

4.3.6.1. PICs shall coordinate dispositions containing flight restrictions, prohibitions, additional operating limits, or modified/nonstandard operating procedures with the appropriate MEL waiver authority (see paragraph **4.3**).

4.3.6.2. PICs will not accept dispositions appearing incomplete, in error, or unsafe. Prior to rejecting a disposition, the PIC will contact the appropriate MEL waiver authority. The waiver authority will attempt to resolve the issue.

NOTE:

Deviations from the flight manual requires approval IAW the flight manual.

4.4. Technical Assistance. The PIC may request technical support and additional assistance from their home unit or MAJCOM C2 agency.

4.5. MEL Table Definitions/Column Identifiers. MEL tables are arranged by aircraft system to provide the PIC a mechanism to determine minimum system requirements. Components are listed by number installed and minimum required for flight. Requirements for home station TDY departure (operational or training missions) are defined in Column A. All other missions fall under Column B. An asterisk (*) in the Required column indicates the number required is situation dependent; refer to the Remarks/Limitations/Exceptions column for clarification.

4.5.1. Remarks/Limitations/Exceptions. Some technical information and procedures are contained in this column. This is not all-inclusive; crewmembers shall refer to the flight manual and other directives for procedures, techniques, limitations, etc.

4.5.1.1. One-time Flight Clarification: A Red X discrepancy must be downgraded through maintenance channels prior to flight. MEL waiver may still be required. This condition does not preclude carrying cargo and passengers. The priority is to move the airplane to a repair capable facility. PICs must coordinate with appropriate agencies to ensure repair capability exists at the destination. One-time flights may include en route stops only when necessary to recover the airplane. ***Example***: An airplane departs on a gear-down flight from Djibouti IAP and requires an en route fuel stop (Cairo) before landing at the nearest repair capable facility, Sigonella NAS.

4.5.1.1.1. One-time flight to nearest repair capable facility: Flight is limited to the nearest (shortest en route time) repair capable base.

4.5.1.1.2. One-time flight to a repair capable facility: Flight is not restricted to the nearest repair capable facility.

4.5.1.2. Other Mission and Repair Clarifications:

4.5.1.2.1. Shall be repaired at next repair capable facility: Mission may continue as scheduled, item shall be repaired upon reaching a repair capable facility. Designate item ME upon reaching repair facility. Once maintenance action is initiated, and it is determined repairs are not possible, the PIC will discuss possible courses of action with C2 agency to return aircraft to service.

4.5.1.2.2. Mission dictates requirement: PIC shall consider the entire mission profile, not just the next leg. ***Example:*** An airplane is departing an en route station with repair capability, after engine start the PIC discovers the #1 engine anti-ice is inoperative. Icing conditions are not forecasted for the next leg. However, because the mission spans several days and repair capability does not exist at the scheduled en route stops, the PIC elects to have the item repaired prior to departing.

4.5.2. Aircraft Model Identification. The tables apply to KC-135 D/E/R/T model aircraft. Specific aircraft information is identified with **(E)** to indicate KC-135 D/E model aircraft and **(R)** to indicate KC-135 R/T model aircraft. Specific information for aircraft modified with TCTO 628, Multi Point Refueling System **(MPRS)**, is listed in **Table 4.19** through **Table 4.26**

4.5.3. Minimum Equipment List. The Tables are divided into three categories: **KC-135 general (Table 4.1 to Table 4.26), Block 30 specific (Table 4.27), Block 40 specific (Table 4.28)**.

Table 4.1. Engines/Auxiliary Power Unit (APU).

NOTE: For engine instruments with both analog and digital displays, the analog presentation is required to be functional.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Engines	4	4	4	Do not take off with non-standard aircraft configuration or power unless a hostile threat to the aircraft and/or crew makes it imperative. 1) Do not take off unless all four engines will achieve takeoff power settings. 2) Do not perform no-flap takeoffs or three-engine takeoffs.
Engine Ignition	8	4	4	One per engine.
Thrust Reversers **(E)**	4	0*	0*	1) Use only symmetrical reverse thrust. Ensure inoperative reverser(s) and its symmetrical counterpart are locked out (pinned) in the forward thrust position. 2) Reverse thrust will not be used if the #1 lever actuation does not cause leading edge flap retraction.
Thrust Reverser Lights **(E)**	4	0*	0*	1) May be inoperative and reverser lever used provided reverser is closed in the forward thrust position prior to takeoff. Ensure inspection is accomplished after each landing in which reverser is used. 2) Use only symmetrical reverse thrust. Ensure #1 lever actuation causes leading edge flap retraction.
EPR Gauges **(E)**	4	4	4	
N1 Gauges **(R)**	4	4	4	

Tachometer (N2)	4	4	3*	1) One may be inoperative after engine start provided all other indicators for affected engine are operating normally. 2) **(E)** With one N2 inop: a). Reduced thrust procedures will be used b). Takeoff EPR will not exceed charted TRT minus 0.10.
EGT Gauge	4	4	4	
Engine Fuel Flowmeter	4	4	3*	One may be inoperative provided all other indicators for affected engine are operating.
Oil Pressure Gauges	4	4	4	
Engine Low Oil Pressure Warning Lights	4	4	0	
Engine Oil Filter Warning Lights**(E)**	4	4	0	
Oil Temperature Indicators	1	1	1	
Eng Fire Detector System (**E**)	1	1	1	
Eng Fire/ Overheat Detection & Extinguishing System (**R**)	1	1	1	
PMC **(R)**	4	4	3*	Refer to Aircraft Flight Manual, Section 3.
APU **(R)**	2	1	0*	Ensure engine start capability exists at recovery site.
APU **(E)**	1	1	0*	Ensure engine start capability exists at recovery site.

Table 4.2. Hydraulics.

Item/System	**Installed**	**Required**		
		A	B	**Remarks/Limitations/Exceptions**
Hydraulic Systems	2	2	2	Must have appropriate accumulator preload.

Item/System	Installed	Required		
Auxiliary Pumps	2	2	1*	Left auxiliary pump must operate.
Hydraulic Pumps	4	4	4	
Hydraulic Systems Pressure Gauge	9/10**	9/10	*	* Sufficient operable gauges to monitor all system hydraulic pressures in-flight.** 4 Pilot Station, 3 Wheel Well & 2 Boom Pod [1 added gauge on air refuelable tankers (ARR)]
Hydraulic Quantity Gauge	1	1	1	
Copilot Instrument Power Hydraulic Motor	1	1	1	
Hydraulic Pump Inop Caution Lights	4	4	4	

Table 4.3. Flight Controls.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Warning Horn and Cutout Switch	1	1	1	
Stabilizer Trim Control Switches	2	2	1*	The trim switch must operate for the pilot flying during critical phases of flight.
Stabilizer Trim Cutout Switch	1	1	1	
Electric Trim Motor	1	1*	1*	Autopilot pitch trim motor does not satisfy requirement.
Power Rudder System	1	1	1	
Flap Position Indicators	4	4	2*	One may be inoperative on either flap gauge provided: a) Flaps operate normally. b) Right Inboard Flap Indicator is operable. c) Flap position is verified before each takeoff and landing.
Spoiler Systems	2	2	2	

Item/System	Installed	Required		
Yaw Damper **(E)**	1	1	0*	Must operate for long range cruise above FL250. Reference Dash-3 Yaw Damper requirements.
Yaw Damper Disengaged Light **(E)**	1	1	0	
EFAS **(R)**	1	1	1	
SYD **(R)**	1	1	1	
CCAB	1	1	1	

Table 4.4. Landing Gear and Brakes.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Landing Gear Position Indicators	3	3	3	
Landing Gear Lock Alignment Stripes	3	3	3	
Wheel Brakes	8	8	8	
Anti-skid System	1	1	1	
Parking Brake	1	1	1	
Landing Gear Handle Warning Light	1	1	1	

Table 4.5. Air Conditioning, Pressurization, and Bleed Air System.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Cabin Pressure Control	1	1*	1*	**(A/B)** Automatic or manual mode must be operable. **(B) Exception**: Not required for unpressurized flight, see AFI 11-202, Volume 3 for requirements. Waiver Required.

Item/System	Installed	Required		
Air Conditioning Temperature Control	1	1	1	Automatic or manual mode must be operable.
Bleed Valves **(R)**	4	4	3*	One time flight to a station with repair capability authorized.
Bleed Valves **(E)**	4	4	3*	Must fail to the closed position. Consider pressurization and temperature for sustained high altitude cruise.
Bleed Air (Air Conditioning) Crossover Valve	1	1	1	
Cabin Altitude Gauge	1	1	1	
Cabin Pressure Warning Light	1	1	0	
Bleed Air System Caution Lights **(R)**	12	12	8*	Leak detect lights must illuminate when the bleed air press-to-test switch is depressed. Only one caution light per engine may be inop.

Table 4.6. Autopilot.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Autopilot	1	1	1*	Not required for operational missions or local transition training. Reference Dash-1, Section II A/R and AP coupled approach limitations. Required for RVSM and MNPS operations (see FLIP). See **Chapter 3**, of this AFI for FDP limits.
Disengage Button	2	1*	0*	For autopilot on air refueling, pilot flying must have an operable disengage button.

Table 4.7. Fuel Systems.

NOTE: **Nonstandard Fuel Loads—WAIVER REQUIRED.**
For MPRS, see Table 4.22. – 4.29

Item/System	Installed	Required	

		A	B	**Remarks/Limitations/Exceptions**
Tank to Engine Manifold Valves	4	4	3	Must fail to open position. Pull circuit breaker.
Center Wing to Fwd Body Tank (Drain) Valves	2	1*	0*	**(A)** Failed to closed position only.
AR to Engine Manifold Valve	1	1	1	
Reserve Tank (Drain) Valves	2	2	0*	If fuel is not needed for flight, and valves are verified closed.
Upper Deck (Drain) Valve	1	1	0*	Must be able to manually open valve if needed.
Wing to Aft Body Tank Valves	4	4	4	
Air Refueling Line Valve	1	1	0*	When electric function has failed, the line valve must be manually opened for all takeoffs regardless of gross weight.
Boost Pumps	8	8	8	
Override Pumps	2	2	0*	1) Zero required if center wing fuel is not necessary for mission accomplishment. 2) With 1 or both pumps inoperative, consider center wing fuel unusable for planning purposes.
Air Refueling Pumps	4	4	3*	1) All must operate for extended over-water operation.2) All must operate for gross weights which do not permit an immediate landing under normal flight manual landing parameters.
Air Refueling Pump Automatic Shutoff System	1	0*	0*	Comply with Flight Manual Procedures.
Engine Manifold Fuel Low Pressure Warning Light	1	1	1	
Fuel Low Pressure Warning Lights	4	0	0	

Fuel Dump System	1	1	1	
Fuel Temperature Gauge **(R)**	1	1	0*	Required for planned missions >6 hours and/or >FL350
IFMP	1	1	1	Refer to IFMP CBIT codes below:
Total Fuel Quantity	1	1	0*	Compute total fuel and TOLD (if required) manually.
CG Indicator	1	1	0*	Compute CG and TOLD (if required) manually.
Fuel Transfer Quantity Display	1	0	0	
Fuel Transfer Rate Display	1	0	0	
Fuel Gauges/ Displays				
Main Tanks	4	4	4	
Center Wing Tank	1	1	1	
Reserve Tank	2	2	0*	1) Visually confirm fuel quantity prior to take off.2) Check and comply with ICDU Malfunction/Action messages.
Forward Body Tank	1	1	1	
Aft Body Tank	1	1	1	
Upper Deck Tank	1	1	0*	1) Verify tank quantity.2) Check and comply with ICDU Malfunction/Action messages.
Fuel Management Advisory Computer	1	1	1	Refer to FMAC CBIT codes below:

FMAC/IFMP Internal CBIT Codes/Title	**Remarks/Limitations**
01	FMAC Inoperative
02 – Reserved	N/A
03 – FMAC Channel A Failure	Functional unless Channel B has also failed (Both should be operational for column A, but one can be down for column B)

04 – FMAC Channel B Failure	Functional unless Channel A has also failed (Both should be operational for column A, but one can be down for column B)
05 – 06	FMAC Inoperative
07 – IFMP Channel A Failure	Functional unless Channel B has also failed (Both should be operational for column A, but one can be down for column B)
08 – IFMP Channel B Failure	Functional unless Channel A has also failed (Both should be operational for column A, but one can be down for column B)
09 – 16	FMAC Inoperative

Table 4.8. Navigation Systems and Associated Equipment

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Magnetic Compass	1	1	1*	Continue mission to a station with repair capability.
Synchro Repeaters	4	4	4	
1553 Data Bus	2	2	2	The bus has 2 channels (A & B). Both channels must be operative.
INU-1 (EGI)	1	1	1	
INU-2 (Carousel IV)	1	1	1	Must perform full ground alignment to verify operation.
Vertical Gyro (SBU-23)	1	1	1	Backup attitude for copilot‘s INU-2 attitude source.
APN 218 Doppler/GSDI	1	1	0*	Unable to airborne align INU-2 if GPS fails.
VOR	2	2	0*	As required for primary or backup navigation or approach.
ILS	2	2	0*	As required for approach.
TACAN	1	1	0*	As required for primary or backup navigation, approach, formation, or rendezvous. Continue mission to a station with repair capability.
IFF/SIF	1	1	0*	Comply with ATC and mission requirements. Required for RVSM operations (see FLIP GP).

Item/System	Installed	Required		
TCAS	1	1	0*	Required for formation missions. Continue mission to a station with repair capability.
Enhanced Ground Proximity Warning System (E-GPWS)	1	1	1*	Not required for operational missions. Continue mission to a station with repair capability.
Flight Data Recorder (FDR)	1	1	1	
Cockpit Voice Recorder (CVR)	1	1	0*	One time flight to a station with repair capability authorized, provided FDR is operable.
Emergency Locator Transponder (ELT)	1	1	1*	If inop, continue the mission to a station with repair capability.
Electronic Cabinet Cooling	1	1	1	
Electronic Cabinet Cooling Overheat Light	2	2	0*	Verify fan operation.

Table 4.9. Flight Instruments.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Standby ADI	1	1	1	
Airspeed Indicators	2	2*	2*	Both analog and digital displays are required to be functional.
True Airspeed Indicator (Nav Station)	1	0	0	May be inoperative with no associated pitot static problems.
TCAS VSIs	2	2	1*	If TCAS is required, TCAS information must be available on one VSI, provided it is also available on the center MFD.
Altitude Alerter	1	1	1*	Not required for operational missions. Required for RVSM operations (see FLIP GP).
Barometric Altimeters	3	2*	2*	Pilot altimeters: Both analog and digital displays are required to be functional. Navigator altimeter: May be inoperative.
Radio Altimeters	2	1	1	

Item/System	Installed	Required		
Outside Air Temperature Gauge	2	1	1	
Accelerometer	1	0	0	
Flight Director / Rotation Go-Around System (FD/RGA)	2	1	1	
Angle of Attack (AOA)	2	1	1	
Comparator Warning System	1	1	0	
Pitot Static Heat	1	1	1	

Table 4.10. Oxygen Equipment

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Oxygen System	2	2	1*	Primary system must be operable, with enough pressure to complete the mission.
MA-1 Portable Oxygen Bottles	8	*	*	One per primary crewmember.
Oxygen Regulators	9	*	*	Each primary crewmember must have access to an operable regulator during flight.

Table 4.11. Ice and Rain Protection.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Engine Anti-Ice **(R)**	4	4	3*	One anti-ice valve can be manually locked half open if maintenance is not available. Observe Flight Manual procedures, Section 1.
Engine Anti-Ice **(E)**	1	1	0*	All anti-ice valves must operate for flight into known or forecast icing conditions.

Item/System	Installed	Required		
Engine Anti-Ice Light **(E)**	1	1	0	
Windshield Wiper System	1	1	0*	At least one wiper must be operational for flights into forecast precipitation at arrival or departure base.
Window Anti-Ice System (Window Heat)	2	2	2*	Pilot and Copilot #1 and #2 windows must operate.
Boom Operator Heated Window	1	1	0*	Required for Air Refueling Mission
Q Inlet Heat	1	1	1	
Angle of Attack Transmitter Anti-Ice	2	2	1*	Operative AOA must have anti-ice transmitter.

Table 4.12. Electrical Systems

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
AC Generator System **(E)**	3	3	2*	1) All must be operative except to avoid delays from airfields where maintenance is not adequate. See Flight Manual —Takeoff with Generator Drive Disconnected" Sec. 1. 2) One time flight is permitted with a disconnected generator drive.
Bus Tie Breaker Light **(E)**	3	3	3	
Generator Breaker Circuit Open Light **(E)**	3	3	3	
Generator Failure Light **(E)**	3	3	3	
Generator Drive Oil Temperature Rise Gauge **(E)**	3	3	3	

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Generator Drive Low Oil Pressure Warning Light **(E)**	3	3	3	
Generator Auto Parallel **(E)**	1	1	0*	See Flight Manual, Section 1, Generator Manual Paralleling.
Generator Power MeterKW / KVAR **(E)**	3	3	3	
KWS-KVARS Watt-Var Meter Selector Switch **(E)**	1	1	1	
Synchronizing Lights **(E)**	2	2	2	
Battery Charging Ammeter **(E)**	1	1	1	
Transformer Rectifiers **(E)**	3	3	3	
DC Load Meter **(E)**	1	1	1	
DC Power Selector Ammeter Voltmeter Switch **(E)**	1	1	1	
Selector Paralleling Voltmeter Freq Meter & Synchronizing Light Switch **(E)**	1	1	1	
Battery (Aircraft/APU) **(E)**	2	2	1	
AC Generator System **(R)**	3	3	2*	1) All must be operative except to avoid delays from airfields where maintenance is not available. A one time takeoff and flight is permitted with IDG disconnected. 2) The two remaining operational generators must be paralleled and supply power to all three generator buses. The disconnected IDG will be repaired prior to the next flight.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Bus Tie Breaker Circuit Open Light **(R)**	3	3	3	
Generator Control Breaker Circuit Open Caution Light **(R)**	3	3	3	
IDG Failure Caution Light **(R)**	3	3	3	
IDG Disconnect Light **(R)**	3	3	3	
Generator Control Unit **(R)**	3	3	3	
Battery Load meter **(R)**	1	1	1	
Transformer Rectifiers **(R)**	4	4	3*	One battery charging TR may be inoperative.
Battery (Aircraft / APU) **(R)**	2	2	1*	Associated battery charging TR must operate.
DC Ammeter & Voltmeter Selector **(R)**	1	1	1	
Voltmeter & Freq Meter Selector (AC Meter Selector) **(R)**	1	1	1	
AC Volt Meter	1	1	1	
DC Volt Meter	1	1	1	
Frequency Meter	1	1	1	
Switched DC Bus	1	1*	1*	Bus must be powered with battery power switch in both normal and emergency positions.
AC Generator Buses	3	3	3	
Copilot Instrument Power	1	1*	1*	Must be able to operate hydraulically (NORMAL) and electrically (EMERGENCY).

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
AC Ammeter **(R)**	3	3	3	

Table 4.13. Communications

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Interphone System	1	1*	1*	1) All primary crewmembers must be able to transmit and receive on interphone.2) System must be operable at pilot and copilot positions for all missions and boom refueling position for air refueling missions.3) CALL function must be operable.
Com 1 UHF Radio	1	1	1	
Com 2/3 UHF/VHF Radio	2	2	1*	As mission requirements dictate.

Table 4.14. Air Refueling Equipment (Only Required for Air Refueling Missions).

(For MPRS see Table 4.22. – 4.29)

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Boom Sighting Door	1	1*	1*	Door must operate.
Boom Azimuth Indicator	1	1	1	
Boom Telescoping Indicator	1	1	1	
Boom Elevation Indicator	1	1	1	
Boom Signal Coil	1	1	1*	Not required for drogue AR. See exceptions in **Chapter 15**.
Boom Signal Amplifier	1	1	0*	In TMO, the tanker must have disconnect capability.
AR Flood Light	1	1	0*	Comply with T.O. requirements.

AR Nozzle Light	1	1	0*	Comply with T.O. requirements.

Table 4.15. Miscellaneous Equipment (For MPRS, see Table 4.22 - 4.29)

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Position lights(Wing Tips and Tail)	4	4	3*	Both wing tip lights and one tail light must be operative.
Strobe Lights	2	2	1	
Landing Lights	3	3	1	Consider night visibility limitations.
Taxi Lights	2	2	0*	One taxi or terrain light must be operative for night operations.
Terrain Light	1	1	0	
Emergency Alarm Bell System	1	1*	1*	Every person on the aircraft must be able to hear the warning system from their seat.
Fire Fighter‘s Equipment Containers	2	2	2	
Fire Extinguishers	3	3	2	One on flight deck and one at aft hatch.
Escape Ropes	4	4	4	
Door Warning Light	1	1	0*	Crew entry door and cargo door must be visually verified secured.
Overhead Panel Caution Light **(R)**	1	1	0	

Table 4.16. Control Display Units (CDUs).

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
CDU-900B	2 (3P) 3 (4P)	2 3	2 2*	Pilot‘s and copilot‘s must be operational.
CBIT Codes/Title		**Remarks/ Limitations**		
01 - 06		CDU inoperative.		

Item/System	Installed	Required	
07 (1553 CD Status)		CDU operative, however, FMAC/FSAS information unavailable on CDU.	
08 - 16		CDU inoperative.	

Table 4.17. Multi-Functional Displays (MFDs)

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
MFD	5 (3P) 6 (4P)	5 6	3* 4*	The center MFD and one of the pilot‘s front MFDs can be inoperative, provided PFD mode can be displayed on the remaining pilot‘s front MFD. **MFD 2B must be operational for all flights. Four person operation:** The navigator‘s MFD must be operational.
MFD Control Panel (CP)	2 (3P) 3 (4P)	2 3	2 2*	Both pilot‘s MFD CPs must be operational. **Four person operation (4P):** The navigator‘s and at least one pilot‘s MFD CP must be operational. The operational MFD CP must be associated with an operational radar control panel.
CBIT Codes/Title		**Remarks/ Limitations**		
01 – 04		MFD inoperative.		
05 – WXR Fail		MFD operative. Radar data unavailable on MFD.		
06 – 11		MFD inoperative.		
12 – AC Out Fail		MFD operative, however, autopilot and flight director NAV-LOC will be inoperative.		
13 – 14		MFD inoperative.		
15 – Control Panel Fail		MFD CP inoperative.		
16 – Parity Fail		MFD inoperative.		

Table 4.18. Color Weather Radar (WXR)

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
WXR-700X Radar	1	1	0*	Required if thunderstorms or IMC conditions are forecast along route of flight.
WCP-701 Radar Control Panel (RCP)	2 (3P) 3 (4P)	2 3	0* 0*	One panel must be operational if radar is required to complete the mission.
Predictive Wind Shear -PWS	1	1	0*	Required if thunderstorms or IMC conditions are forecast along route of flight.

CBIT Codes/Title	**Remarks/ Limitations**
01 – 02	Radar RT inoperative.
03 – On-side Attitude Fail	Stab switch inoperative; Radar RT inoperative for 3P.
04 – Control 0 Invalid	Pilot‘s radar controls inoperative (MFD).
05 – Control 1 Invalid	Copilot‘s radar controls inoperative (MFD).
06 – Control 2 Invalid	Navigator‘s radar controls inoperative (MFD).
07 – Control 3 Invalid	Pilot‘s RCP inoperative.
08 – Control 4 Invalid	Copilot‘s RCP inoperative.
09 – Control 5 Invalid	Navigator‘s RCP inoperative.
10 – Heading Fail	Radar RT inoperative.
11 – 12	PWS inoperative.
13 thru 16 - Unused	

Table 4.19. AR Pod Fuel Systems (Nonstandard Fuel Loads – WAIVER REQUIRED).

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Air Refueling Pumps (w/TCTO 628)	4	2*	2*	*One required for single AR Pod refueling, two required for double AR Pod refueling.
Wing Isolation Control Valve	2	1*	1*	Must be functional from Pilot‘s Wing Isolation Valve Control Panel.
PCP Offload Total Display	2	0*	0*	IFMP Total Fuel, Forward body, and Aft body tank quantity gauges must be functional. Compute offload manually.

Item/System	Installed	Required		
Gravity Drain Manifold	1	1	1	

Table 4.20. AR Pod Exterior Lighting.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Pod Illumination Lights	2	1*	1*	Pod refuel only on side with operating PCP.
Outboard Nacelle Illumination Lights	2	1*	1*	Pod refuel only on side with operating PCP.
Horizontal Stabilizer Illumination Lights	2	1*	1*	Pod refuel only on side with operating PCP.

Table 4.21. AR Pod Trailing Components.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Paradrogue	2	1*	1*	Pod refuel only on side with operating PCP.
MA-4 Reception Coupling	2	1*	1*	Pod refuel only on side with operating PCP.
Buffer Spring Assembly	2	1*	1*	Pod refuel only on side with operating PCP.
Hose Assembly (Pod Hose)	2	1*	1*	Pod refuel only on side with operating PCP.

Table 4.22. Boom Operator AR Pod Receiver Viewing System.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**

Item/System	Installed	Required		
AR Pod Receiver Viewing System (Existing Observation Window—Two per side in Boom Pod)	4	4*	2*	Adequate field of vision to conduct AR Pod refueling, at the discretion of the BO.

Table 4.23. Boom Operator Compartment AR Pod Controls and Indicators.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Aerial Refuel Master Switch	1	1*	1*	Must be on to provide pod exterior lighting, PCP switch, and emergency breakaway signal switch power.
Emergency Breakaway Switch Signal (On Boom Telescope Lever)	1	1*	1*	Must be functional.
Pod Control Panel (Left & Right)	2	1*	1*	One side may be inoperative if other side is operative.
Hose Jettison Switch	2	2*	2*	Hose must be at full trail to jettison.
Master Power/On Switch	2	1*	1*	Pod refuel only with operating PCP.
Isolation Valve Switch	2	1*	1*	Pod refuel only with operating PCP.
Fuel Pressure High Light	2	1*	1*	Pod refuel only with operating PCP.
Ram Air Turbine Overspeed Light	2	1*	1*	Pod refuel only with operating PCP.
Fuel Temperature High Light	2	1*	1*	Pod refuel only with operating PCP.
Fuel Pressure Low Light	2	1*	1*	Pod refuel only with operating PCP.
Pod Failed Light	2	1*	1*	Pod refuel only with operating PCP.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Full Trail Advisory Light	2	1*	1*	Pod refuel only with operating PCP.
Pod Refueling Range Advisory Status Lights (Green)	14	7*	7*	Pod refuel only with operating PCP.
Pod Forward Limit Advisory Status Lights (Amber)	2	1*	1*	Pod refuel only with operating PCP.
Pod Warning Advisory Status Lights (Red)	2	1*	1*	Pod refuel only with operating PCP.
Hose Stowed Advisory Light (Blue)	2	1*	1*	Pod refuel only with operating PCP.
Alarm Override/Volume Switch/Control	1	1	1	
Pod Valve Switch	2	1*	1*	Must be functional on operating PCP for overwater fighter deployments.
Pod Valve Armed/Open Light	2	1*	1*	Must be functional on operating PCP.
PCP Lights Dim Switch	1	0*	0*	PCP(s) must still be functional. Refuel at crew‘s discretion.
Panel Lights Test Switch	1	1	1	
Pod Light Dimming Flood Control	2	1*	1*	Refuel at crew‘s discretion.
BITE Switch	2	1*	1*	Must be functional on operating PCP.
Reset Switch	2	0	0	
Rewind/Trail Switch	2	1*	1*	Must be functional on operating PCP.

Table 4.24. AR Pod Receiver Signal Lights.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Red Lights	4	2*	2*	Must be functional on operating pod.
Amber (Yellow) Lights	4	2*	2*	Must be functional on operating pod.
Green Lights	4	2*	2*	Must be functional on operating pod.

Table 4.25. Pilot AR Pod Controls and Indicators.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Drogue Not Stowed Indictor Lights (Left & Right)	2	0*	0*	Visually confirm drogue is fully stowed upon completion of AR Pod refueling.
AR Pod Engaged Indictor Lights (Left & Right)	2	0*	0*	Visually confirm when receiver is in the contact or disconnect position. Visually monitor offload by all means available.
Isolation Valve Switches	2	1*	1*	Remaining Isolation valve switch must be functional.
Isolation Valve Open/Closed (Position) Indicator Lights (Left & Right)	2	1*	1*	Boom Operator‘s PCP Isolation valve switch must be functional on PCP to be used during AR Pod refueling.

Table 4.26. AR Pod/Pylon.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
Ram Air Turbine	2	1*	1*	Must be functional on operating pod.
Fuel Pump	2	1*	1*	Must be functional on operating pod.
Fuel Supply Line	2	2	2	
Hose Drum Assembly	2	1*	1*	Must be functional on operating pod.

Item/System	Installed	Required		
Drogue	2	1*	1*	Must be functional on operating pod.
Power Supply	2	1*	1*	Must be functional on operating pod.
Tensator Unit (5 Cassettes on each pod)	10	5*	5*	Must be functional on operating pod.
Vane Pump	2	1*	1*	Must be functional on operating pod.
Fuel Control Valve (FCV)	2	1*	1*	Must be functional on operating pod.
Digital Refueling Control Unit (DRCU)	2	1*	1*	Must be functional on operating pod.

Table 4.27. BLOCK 30.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
HF Radio	1	1	0*	As mission requirements dictate.
GPS	1	1	0*	Initial position and date/time must be manually inserted into the EGI. This will degrade the FMS system accuracy. Required for MNPS operations.
BSIU	1	1	1	
CBIT Codes/Title 01 thru 03 - Unused		**Remarks/ Limitations**		
04 – 12		BSIU inoperative.		
13 – SIM 4 - J9 (IFF)		BSIU operative and IFF will not be impacted due to new hardware configuration.		
14 thru 16 - Reserved				
Data Loader	1	1	1	Valid database required
CBIT Codes/Title 01 thru 03 - Reserved		**Remarks/ Limitations**		
04 – 06		DLDR inoperative.		

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
07 – Reserved				
08		DLDR inoperative.		
09 – Reserved				
10 – 16		DLDR inoperative.		
DADC	2	2	1*	See Flight Manual for RVSM requirements.
CBIT Codes/Title 01 thru 03 - Unused		**Remarks/ Limitations**		
04		DADC inoperative.		
05 thru 14 - Unused				
15 – 16		DADC inoperative.		

Table 4.28. BLOCK 40.

Item/System	Installed	Required		
		A	B	**Remarks/Limitations/Exceptions**
GPS	4	4	2*	* One operating GPS receiver must be an MMR in civil mode for RNP controlled airspace. See MMR GPS CBIT codes below.
INU-1 (EGI)	1	1	1	Refer to INU1/INU2 status table below:
INU-2 (EGI)	1	1	1	Refer to INU1/INU2 status table below:
INU1/INU2 Status Codes/ Title RPU – Reveiver/Processor Unit		**Remarks/Limitations** NGO = EGI GPS functions Inoperative		
SEN REF – Sensor Reference		NGO = EGI Inertial Sensor Inoperative		
DGT ATT – Digital Altitude		NGO = EGI Digital Altitude Inoperative		
BATT - Battery		NGO = Present position and/or keys may be lost after power cycling. Replace battery. En-route allowable.		
NAV -		NGO = EGI Navigation Inoperative		

Item/System	Installed	Required		
ALT – Altitude Loop Fail		NGO = EGI Altitude Inoperative		
INU1/INU2 1553 IRB Status NGO IRB1		Operational as long as FMB is operative. Allowable for en-route.		
NGO IRB2		Operational as long as FMA is operative. Allowable for en-route.		
MMR GPS CBIT Codes/ Title 01 – GPS Receiver Processor Unit Fail		**Remarks/Limitations** GPS Inoperative		
02 – GPS Battery Fail		MMR will require several minutes to acquire present position upon power-up.		
03 – Reserved		N/A		
04 – 05		GPS Inoperative		
06 thru 07 – Reserved		N/A		
08 thru 11 – Spare		N/A		
12 thru 16 – Reserved		N/A		
MLS	2	0	0	As required for approach. Refer to MLS CBIT codes below:
MLS CBIT Codes/Title 01 – MLS Function Failure		**Remarks/Limitations** MLS Inoperative		
02 – Reserved - Landing Antenna Failure		N/A		
03 – Reserved - Omni Antenna Failure		N/A		
04 – Reserved - Tail Antenna Failure		N/A		
05 – Reserved - DME Bus Input Failure		N/A		
06 thru 16 – Spare		N/A		
V/UHF 1553 Status NGO FMA		Operational as long as FMB is operative. Allowable for en-route.		

Item/System	Installed	Required		
NGO FMB		Operational as long as FMA is operative. Allowable for en-route.		
Item/System	**Installed**	**Required**		**Remarks/Limitations/Exceptions**
HF Radio	2	1	0	As mission requirements dictate. Refer to HF CBIT codes below:
HF CBIT Codes/Title		**Remarks/Limitations**		
01 – 02		HF Inoperative		
03 – Anti-Jam Processor Fail		Reload AJ time and keys		
04 – Fault is Present		HF Inoperative		
05 – Reserved		N/A		
06 – 09		HF Inoperative		
10 – Communication Error		Reload data-fill		
11 – 14		HF Inoperative		
15 – Terminal Fail		Either 1553 FMA, FMB or both busses to radio may be down. Check HF 1553 status below:		
16 – Subsystem Fail		Either 1553 FMA, FMB or both busses to radio may be down. Check HF 1553 status below:		
HF 1553 Status NGO FMA		Operational as long as FMB is operative. Allowable for en-route.		
NGO FMB		Operational as long as FMA is operative. Allowable for en-route.		
Item/System	**Installed**	**Required**		**Remarks/Limitations/Exceptions**
SATCOM	1	0	0	Comply with ATC and mission requirements. See SATCOM CBIT Codes below.
SATCOM CBIT Codes/Title 01 – 04		**Remarks/Limitations** SATCOM Inoperative		
05 – MCDU #1 Input Fail (IPC2)		Copilot will be unable to operate SATCOM. Pilot & Nav Will.		
06 – MCDU #2 Input Fail (IPC1)		Pilot will be unable to operate SATCOM. Copilot & Nav Will.		

Item/System	Installed	Required	
07 – MCDU #3 Input Fail (IPC1)		Navigator will be unable to operate SATCOM. Pilot & Copilot Will.	
08 – CFDS Input Bus Failure		Pilot will be unable to operate SATCOM.	
09 – 10		SATCOM Inoperative	
11 – HPA Over Temperature		Check for SATCOM fan operation	
12 – Voice/Data Channel 1 Fail		No voice communications on SATCOM possible, but data link operations will be functional as long as bit 13 (Voice/Data Channel 2 Fail) is not also faulted.	
13 – Voice/Data Channel 2 Fail		No voice communications on SATCOM possible, but data link operations will be functional as long as bit 12 (Voice/Data Channel 1 Fail) is not also faulted.	
14 – Satellite Data Unit Strapping Parity		SATCOM Inoperative	
15 – Rx Combiner/Cable Fault		SATCOM Inoperative	
16 – Aircraft ID (ICAO Address) Failure		CMU not sending aircraft ID from APM. Check CMU and APM module.	
SATCOM ARINC Status NGO		SATCOM inoperable. Requires position data sent from IPC to aim the antenna.	
Item/System	**Installed**	**Required**	**Remarks/Limitations/Exceptions**
VHF Data link	2	0 0	Comply with ATC and mission requirements.
Automatic Communications Processor (ACP)	2	0 0	Comply with ATC and mission requirements.
Communications Management Unit	2	0 0	Comply with ATC and mission requirements. See CMU CBIT codes below:
CMU CBIT Codes/Title		**Remarks/Limitations**	
01 – MCDU #1 Key Input Failure		Operational as long as bits 5 or 6 are not faulty. En-route – pilot discretion.	
02 – Printer Input Failure		Printer Inoperative. En-route – pilot discretion.	
03 – FMC #1 Failure		CMU Inoperative	
04 – Reserved		N/A	

Item/System	Installed	Required		
05 – MCDU #2 Key Input Failure		Operational as long as bits 1 or 6 are not faulty. En-route – pilot discretion.		
06 – MCDU #3 Key Input Failure		Operational as long as bits 1 or 5 are not faulty. En-route – pilot discretion.		
07 – FMC #2 Failure		Copilot is unable to communicate with the CMU. En-route – pilot discretion.		
08 – SRT Data #1 Failure		No SATCOM data link capability. As mission dictates. En-route – pilot discretion.		
09 – Crosstalk Input Failure		Left and Right side CMU cannot determine master/slave status. En-route – pilot discretion.		
10 – HFDL #1 Input Failure		No HF data link operations. As mission dictates		
11 – SRT Data #2 Failure		CMU Inoperative. No data link capabilities.		
12 – HFDL #2 Input Failure		N/A		
13 – VDL #1 Input Failure		Operational as long as bit 14 (VDL #2) is not also faulted. En-route – pilot discretion.		
14 – VDL #2 Input Failure		Operational as long as bit 13 (VDL #1) is not also faulted. En-route – pilot discretion.		
15 – IPC Bus 9 Input Failure		Operational as long bit 16 (IPC #2) is not also faulted. En-route – pilot discretion.		
16 – IPC Bus 10 Input Failure		Operational as long bit 15 (IPC #1) is not also faulted. En-route – pilot discretion.		
Multi-Mode Receiver (MMR)	2	1	1	Comply with ATC and mission requirements.
MMR CBIT Codes/Title		**Remarks/Limitations**		
01 – ACARS/FMS Bus #1 Failure		IPC #1 is unable to communicate with the MMR. En-route – pilot discretion.		
02 – ACARS/FMS Bus #2 Failure		IPC #2 is unable to communicate with the MMR. En-route – pilot discretion.		
03 – Air Data Input Bus #1 Failure		N/A		
04 – Air Data Input Bus #2 Failure		MMR Inoperative		
05 – 07		MMR GPS Inoperative		
08 thru 16 – Spare		N/A		

Item/System	Installed	Required		
MMR Tune Bus NGO		MMR Inoperative		
Item/System	**Installed/Required/Limitations**			
IPC	2	2	2	
<u>CCM Software</u>				
CNS		IPC Inoperative		
IMFD		En-route allowable unless cross-side IPC also has NGO for IMFD software.		
CCM Node		IPC Inoperative if failed		
CCM CBIT Codes/Title		Remarks/Limitations		
01 – 10		IPC Inoperative		
11 thru 16 – Spare		N/A		
CCM 1553 Status NGO FMA		Operational as long as FMB is operative. Allowable for en-route.		
NGO FMB		Operational as long as FMA is operative. Allowable for en-route.		
CCM ARINC Status ARINC 1		CCM1 bus 1 fail. En-route as long as bus 2 (ARINC 3) is not faulted.		
ARINC 2		CCM1 bus 2 fail. En-route as long as bus 1 (ARINC 2) is not faulted.		
ARINC 3		CCM2 bus 1 fail. En-route as long as bus 4 (ARINC 3) is not faulted.		
ARINC 4		CCM2 bus 2 fail. En-route as long as bus 3 (ARINC 2) is not faulted.		
IOC Software				
APF		IPC Inoperative		
FMF		En-route allowable unless cross-side IPC also shows FMF software as NGO.		
IOC Node		IPC Inoperative if failed.		
IOC CBIT Codes/Title 01 – 06		IPC Inoperative		

Item/System	Installed	Required	
07 thru 16 – Spare		N/A	
IOC Software Status APF		En-route allowable as long as cross-side IOC software is operational.	
IOC		En-route allowable as long as cross-side IOC software is operational.	
IOC ARINC Status ARINC 1- MCDU 1 Display #1 Input		En-route allowable as long as cross-side IPC does not also indicate same error.	
ARINC 2 – 702A Bus #2 Input		En-route allowable as long as cross-side IPC does not also indicate same error.	
ARINC 3 – CFDS Bus Input		En-route allowable as long as cross-side IPC does not also indicate same error.	
ARINC 4 – 1,2,3 Display #1 Input		En-route allowable as long as cross-side IPC does not also indicate same error.	
ARINC 5 – MCDU 2, 3 Display #1 Input		En-route allowable as long as cross-side IPC does not also indicate same error.	
ARINC 6 – Pilot MFD Data Input		En-route allowable as long as cross-side IPC does not also indicate same error.	
ARINC 8 – 582 TACAN Data from MFD1C		En-route allowable as long as cross-side IPC does not also indicate same error.	
ARINC 9 – TCAS Display Data Input #2		En-route allowable as long as cross-side IPC does not also indicate same error.	
ARINC 15 – Copilot MFD Data Input		En-route allowable as long as cross-side IPC does not also indicate same error.	
ARINC 16 – Navigator MFD Data Input		En-route allowable as long as cross-side IPC does not also indicate same error.	
ARINC 17 – TCAS Display Data Input #1		En-route allowable as long as cross-side IPC does not also indicate same error.	
ARINC 31 – Printer Input		En-route allowable as long as cross-side IPC does not also indicate same error.	
ARINC 33 – 702A Bus #1 Input		En-route allowable as long as cross-side IPC does not also indicate same error.	
ARINC 34 – MCDU 2,3 Display #2 Input		En-route allowable as long as cross-side IPC does not also indicate same error.	

Item/System	Installed	Required		
ARINC 34- MCDU 2,3 Display #2 Input		En-route allowable as long as cross-side IPC does not also indicate same error.		
ARINC 35- MCDU 1 Display #2 Input		En-route allowable as long as cross-side IPC does not also indicate same error.		
PEM CBIT Codes/Title 01 – PEM Failure		IPC Inoperative		
02 – Fan Fault		Mission can proceed, replace PEM when applicable. Possibility of overheat condition which could cause the IPC to shut down. Proceed on pilot‘s discretion.		
03 – Replace Battery		Approximately 2-3 days of holdup are left. Replace battery.		
04 – Power Conditioning Unit A Fail		If Power Conditioning Unit B is operational, IPC will function normally.		
05 – Unit A Over Temperature Condition		IPC Will shut off if a fan fault results in an over-temp condition.		
06 – Power Conditioning Unit B Fail		If Power Conditioning Unit A is operational, IPC will function normally.		
07 – Unit B Over Temperature Condition		IPC Will shut off if fan fault results in an over-temp condition.		
08 thru 16 – Spare		IPC Inoperative		
DSM CBIT Codes/Title 01 – Switch A Hardware Failure		IPC Inoperative		
02 – Switch B Hardware Failure		No required action		
03 – Point of Load Regulator (POLR) A Failure		IPC Inoperative		
04 – Point of Load Regulator (POLR) B Failure		No required action		
05 thru 16 – Spare		N/A		
DSM LAN Status NGO		IPC Inoperative		
Data Loader	2	2	0*	Valid databases required
<u>CBIT Codes/Title</u> 01 thru 03 – Reserved		**<u>Remarks/Limitations</u>** N/A		

Item/System	Installed	Required		
04 – 06		DLDR inoperative.		
07 – Reserved		N/A		
08 – RAM Fault		DLDR inoperative.		
09 – Reserved		N/A		
10 – LSI Fault		DLDR inoperative.		
11 – 12		DLDR inoperative on ground.		
13 – Fault B Bus		DLDR Still operable unless bit 14 (Bus A) is also faulted.		
14 – Fault A Bus		DLDR Still operable unless bit 13 (Bus B) is also faulted.		
15 – 16		DLDR inoperative.		
DLDR 1553 Status NGO FMA		Operational as long as FMB is operative. Allowable for en-route.		
NGO FMB		Operational as long as FMA is operative. Allowable for en-route.		
Item/System/CBIT Code	**Installed**	**Required**		**Remarks/Limitations/Exceptions**
		A	B	
Air Data Computer (Non-RVSM)	1	1	1	
CBIT Codes/Title		**Remarks/Limitations**		
01 thru 03 – Unused		N/A		
04 – ADC Fail		DADC inoperative.		
05 thru 14 - Unused		N/A		
15 – 16		DADC inoperative.		
Item/System/CBIT Code	**Installed**	**Required**		**Remarks/Limitations/Exceptions**
Air Data Computer (With RVSM)	2	2*	1*	* DADC 1 required.
CBIT Codes/Title		**Remarks/Limitations**		
01 – 05		CADC Inoperative		

Item/System	Installed	Required		
06 – 07		CADC DEGRADED		
08 – 10		CADC Inoperative		
11 – 12		CADC DEGRADED		
13 – Baro System Fault		CADC Inoperative		
14 – Altimeter Fault or Altitude Alerter Fault		CADC DEGRADED		
15 – Subsystem Status		CADC Inoperative		
16 – Terminal Status		Check CADC 1553 Status below to determine if at least one 1553 bus is still available.		
CADC 1553 Status NGO FMA		Operational as long as FMB is operative. Allowable for en-route.		
NGO FMB		Operational as long as FMA is operative. Allowable for en-route.		
Integrated Hand Controller	3	1	1	PF or PNF IHC must be operable.
Thermal Printer	1	0	0	Refer to Printer CBIT codes below:
Printer CBIT Codes/Title		**Remarks/Limitations**		
01 – Printer Out of Paper		Replace the paper roll in the printer.		
02 – 12		Printer Inoperative		
13 thru 16 – Spare		N/A		

4.6. Not Used.

4.7. Supplements. Each MAJCOM may supplement the MEL (see **Chapter 1**).

4.8. One Engine Inoperative Ferry Operations. PICs will only conduct 3-engine ferry operations after exhausting all other avenues to return an aircraft with an inoperative engine to MC status. Each three-engine ferry sortie must be approved by MAJCOM/A3/DO. The owning MAJCOM will provide execution authority for these sorties. As directed by the appropriate MAJCOM only highly qualified crewmembers from MAJCOM/A3/A3V, NAF/DOV or unit OG/OGV will conduct three-engine ferry flights. The following procedures apply:

4.8.1. Plan ferry operations well ahead to allow sufficient time for completion of maintenance preparation actions.

4.8.2. Plan the flight to the nearest destination possessing a usable maintenance support capability. Obtain clearances and alert all en route, alternate, and abort bases along the intended route of flight.

4.8.3. Use the minimum crew necessary for the ferry operation. A qualified BO and a maximum of two crew chiefs (one 7-skill level) may be added. Do not carry passengers or other non-essential personnel. Observe aircraft flight manual limitations.

4.8.4. All primary aircraft systems not associated with the failed engine must be fully operational.

4.8.5. Performance data must satisfy takeoff field length requirements, gear down 3-engine climb performance, and final segment two-engine asymmetric go-around capability.

4.8.6. Download cargo (including mission support kits) prior to ferry operations. Return all cargo and support equipment to the main operating base of assignment via organic support aircraft or other airlift means.

4.9. Gear Down Flight Operations. Limit gear down flight operations to sorties required to move the aircraft to a suitable repair facility. Consider gear down flight only after the PIC exhausts all avenues to repair the aircraft in place.

4.9.1. Standard climb-out flight path charts in T.O. 1C-135(K)R-1-1 and T.O. 1C-135(K)E-1-1 do not account for a gear-down configuration. Therefore, PICs shall not takeoff until there is reasonable assurance that they will achieve/maintain adequate obstacle clearance (to include en route stops and alternates).

4.9.2. Time and communications capability permitting, validate takeoff data with MAJCOM Stan/Eval or unit OG/OGV.

4.10. Power Management Control (PMC) Operations. The PIC may (authorize) takeoff with one PMC inoperative. Do not turn off an operational PMC to practice a PMC inoperative takeoff. Simulated three-engine approaches and touch-and-go landings are not authorized with a PMC inoperative.

Chapter 5

OPERATIONAL PROCEDURES

5.1. Checklists. A checklist is not complete until all items have been accomplished. Momentary hesitations for coordination items, Red Ball MX, ATC interruptions and deviations specified in the flight manual, etc., are authorized. Notes amplifying checklist procedures or limitations may be added to the checklists. Currency of notes is a crewmember‘s responsibility.

5.1. (AETC)Checklists. For standardization purposes and management control, all crew members will maintain/update any issued checklists (to include unit developed, local aircrew aids, or fan folds) that have been submitted and approved IAW AFI 11-215/AETC Sup.

5.1.1. Checklist Inserts. MAJCOM Stan/Evals shall approve the use of checklist inserts IAW AFI 11-215, *Flight Manual Program (FMP*). For AMC and AMC-gained units, AMC/A3V is the checklist insert approval authority. The inserts should be placed at the end of the appropriate checklist or in an in-flight guide. All checklist inserts must have a POC. OGVs shall approve local in-flight guides and inserts not affecting T.O. guidance and procedures.

5.1.1. **(AETC)** Checklist Inserts. All students enrolled in AETC formal courses will comply with AETC requirements.

5.1.2. Abbreviated checklists items that do not apply to the unit‘s aircraft or mission may be lined out.

5.1.3. Crewmembers may use the most current version of applicable fanfold checklists in lieu of abbreviated checklists. Fanfold checklists must be current and contain all applicable basic flight manual supplement information.

5.2. Duty Station. Both pilots shall be in their seats during flight. One of the pilots may be out of their seat for brief periods to meet physiological needs. With both pilots in their seats, PICs may authorize rest periods for one pilot occupying a primary duty station during non-critical phases of flight (the other pilot will be awake and alert). The PIC, pilot/copilot, BO and navigator (if applicable) will be at their duty stations during all critical phases of flight.

5.3. Flight Station Entry. PICs may authorize passengers and observers access to the flight station during all phases of flight; the total number of persons permitted is limited to the number of seats with operable seat belts and oxygen. Passengers and observers will not be permitted access to pilot or co-pilot positions.

5.4. Takeoff and Landing Policy. An aircraft commander, or above, will occupy either the left or the right seat during all takeoffs and landings. The designated PIC (A-code) is not required to occupy a primary position, but still retains overall authority for conduct of the mission.

5.4.1. An AC or IP will make all takeoffs and landings during emergencies and on OPLAN 8044 missions, unless conditions prevent compliance.

5.4.2. For the first 100 hours after AC certification, if the pilot in the other seat is not an AC or above, the new AC will make all takeoffs and landings under any of the following conditions:

5.4.2.1. Ceiling/visibility less than 300 feet and/or RVR 4000 (3/4 SM visibility).

5.4.2.2. RCR equivalent to less than a wet runway.

5.4.2.3. Crosswind component greater than 15 knots.

5.5. Landing Gear and Flap Operating Policy. The pilot flying (PF) will command configuration changes. The pilot not flying (PNF) will verify appropriate airspeed and configuration prior to actuating the gear or flaps.

5.6. Outside Observer/Jump Seat Duties. Available crewmembers will assist in clearing during taxi operations, and any time the aircraft is below 10,000 feet AGL.

5.7. Seat Belts.

5.7.1. All occupants will have a designated seat with a seat belt.

5.7.2. Crewmembers will have seat belts fastened when occupying a duty position, unless crew duties dictate otherwise.

5.7.3. All crewmembers will have seat belts and shoulder harnesses fastened during takeoff and landing. For air refueling and tactical operations, all crewmembers and passengers will have seat belts and shoulder harness fastened, if accessible (unless authorized by the PIC or crew duties dictate otherwise). Crewmembers performing instructor or flight examiner duties are exempt from seat belt requirements if not occupying a primary crew position; however, they will have a seat available with an operable seat belt.

5.7.4. Litter patients, actual or simulated, must remain secured on litters for taxi, takeoff, AR, landing and when directed.

5.7.5. Crew bunks will not be occupied during taxi, takeoff, landing, air refueling operations, or when directed by the PIC.

5.8. Aircraft Lighting. IAW AFI 11-202V3, AFI 11-218, *Aircraft Operations and Movement on the Ground*, and applicable T.O.s.

5.9. Portable Electronic Devices. IAW AFI 11-202V3.

5.9.1. Do not connect unauthorized equipment (laptop computers, video equipment, food preparation equipment, radios/tape players, CD players, etc.) to the aircraft intercom, PA, radio systems, or electrical system. Approved vacuum cleaners are authorized for ground use.

5.9.2. Aircrew members shall not use uncertified Government Furnished Equipment (GFE) or personal devices with RF transmit/receive capability on aircraft carrying hazard class 1 explosive cargo at anytime. Prohibited in-flight use of devices includes cellular phones and laptop computers/PDAs with wireless capability enabled (i.e. Bluetooth). Boom operators will ensure passengers comply with this restriction. Aircrew members may use certified GFE such as PFPS laptops and PDAs with infrared transmitters.

5.9.3. The following handheld (HH) GPS units meet the requirements of AFI 11-202V3 and may be used with approved laptop computers in flight: Bendix King KLX100, Garmin GPS 35-USB, and Hiacom HI-303III.

5.9.3.1. The use of HH GPS for moving map display (MMD) is designed as a situational awareness tool and its use is voluntary.

5.9.4. Turn off Iridium phones within 25 feet of ground refueling operations.

5.9.5. Turn off Iridium phones during takeoff, receiver air refueling, approach, and landing. At the discretion of the PIC, the Iridium phone may be left on during tanker air refueling operations.

5.10. Tobacco Use on Air Force Aircraft. Tobacco use of any type is prohibited on Air Force aircraft.

5.11. Advisory Calls. The pilot flying (PF) will periodically announce intentions during departures, arrivals, approaches, and when circumstances require deviating from normal procedures. **Table 5.1** through **Table 5.4** depict mandatory calls for nonprecision approaches, precision approaches, climbout and descent, respectively. PNF will initiate all interphone calls unless accomplished by alerting equipment. PF must acknowledge all calls, including those made by the EGPWS/Altitude Alerter.

Table 5.1. Nonprecision Approaches.

PHASE OF FLIGHT	PNF CALL	PF RESPONSE
100 feet above FAF altitude	~~"~~100 above"	
100 feet above step down altitude	~~"~~100 above"	
100 feet above Minimum Descent Altitude (MDA)	~~"~~100 above"	
At MDA	~~"~~Minimums"	
Runway environment in sight	~~"~~Runway in sight"	
MAP	~~"~~Missed Approach Point"	See note (1)

Table 5.2. Precision Approaches.

PHASE OF FLIGHT	PNF CALL	PF RESPONSE
100 feet above glide slope intercept altitude	~~"~~100 above"	
100 feet above Decision Height (DH)	~~"~~100 above"	
At DH		
- Runway environment in sight	~~"~~Land"	See note (3)
- Approach Lights in sight (CAT 1 ILS)	~~"~~Continue" (2)	~~"~~Continue" (3)
- Approach lights and/or Runway environment not in sight	~~"~~Go-around"	~~"~~Go-around"

Table 5.3. Climb Out.

PHASE OF FLIGHT	PNF CALL	PF RESPONSE
Transition Altitude	"Transition Altitude"	
1000 below assigned altitude	"1000 Below"	

Table 5.4. Descent.

PHASE OF FLIGHT	PNF CALL	PF RESPONSE
Transition Level	"Transition Level"(4)	(See Note 4)
1000 above assigned altitude	"1000 Above"	

NOTE:

1. The PF will announce his/her intentions to either land or go-around. If the runway environment is not in sight and/or the aircraft is not in position for a normal landing, a go around will be made.

2. With weather at CAT 1 minimums on a CAT 1 ILS, the pilot may not see the runway environment at DH; however, the initial portion of the approach lights will be visible. The pilot may continue to 100 HAT with reference to the approach lights. The pilot may not descend below 100 feet above touchdown zone elevation using the approach lights as reference unless the red terminating bars or the red side row bars are distinctly visible and identifiable.

3. The PF will announce his/her intentions to either land, continue, or go-around.

4. Both pilots will state the altimeter setting.

5.11.1. Deviations.

5.11.1.1. The PNF will inform the PF when heading or airspeed deviations are observed, or when the altitude is more than 100 feet from the desired, and no attempt is being made to correct the deviation.

5.11.1.2. Any crewmember seeing a deviation of 200 feet altitude or 10 knots in airspeed, or a potential terrain or obstruction problem, will immediately notify the PF. Deviations from prescribed procedures for the approach being flown will also be announced.

5.12. Communications Policy. The Air Force does not give a promise of confidentiality to aircrews regarding their recorded aircraft crew communications. Crewmembers are expected to maintain a high degree of cockpit professionalism and crew coordination at all times.

5.12.1. Sterile Cockpit. Limit conversation to that essential for crew coordination and mission accomplishment during taxi, takeoff, air refueling, approach, landing, and any flight below 10,000 feet AGL.

5.12.2. Aircraft Interphone. Primary crewmembers will monitor interphone during critical phases of flight. Crewmembers will advise the PF before checking off interphone. Crewmembers will ensure personnel on headset, or within listening distance, are cleared prior to discussing classified information over interphone. Use the erase function of the CVR after classified discussions.

5.12.3. Command Radios.

5.12.3.1. The PNF normally makes all air traffic control (ATC) radio calls.

5.12.3.2. In terminal areas, all crewmembers (if able) will monitor the ATC frequency unless directed otherwise. A crewmember will be designated to monitor C2 frequencies on the inbound and outbound legs.

5.12.3.3. The pilot operating the radios will notify the crew which radio is primary ATC, and update the crew when the primary ATC radio changes.

5.12.3.4. One pilot should record and read back all ATC clearances; the navigator or boom operator (if applicable/available) will monitor the read back and will ensure compliance with all clearances.

5.12.3.5. Both pilots will monitor UHF and VHF guard emergency frequencies to the maximum extent possible.

EXCEPTION:
Only one crewmember is required to monitor guard frequencies during tanker or receiver rendezvous and AR.

5.12.3.6. The Federal Communications Commission (FCC) prohibits the use of unauthorized frequencies for interplane, HAVE QUICK, or SECURE VOICE training.

5.12.4. Crew Resource Management (CRM) Assertive Statement ―Time Out":

5.12.4.1. ―Time Out" is the common assertive statement for use by all crewmembers. The use of "Time Out" will:

5.12.4.1.1. Provide a clear warning sign of a deviation or loss of situational awareness.

5.12.4.1.2. Provide an opportunity to break the error chain before a mishap occurs.

5.12.4.1.3. Notify all crewmembers when someone sees the aircraft or crew departing from established guidelines, the briefed scenario, or that someone is simply uncomfortable with the developing conditions.

5.12.4.2. As soon as possible after a "Time Out" has been called, the aircrew will take the following actions:

5.12.4.2.1. Safety permitting, stabilize the aircraft.

5.12.4.2.2. The initiating crewmember will voice their concerns to the crew.

5.12.4.2.3. The PIC will provide all other crewmembers with the opportunity to voice inputs relative to the stated concerns.

5.12.4.2.4. After considering all inputs, the PIC will direct the aircrew to continue the current course of action or direct a new course of action.

5.13. Transportation of Pets. Transporting pets (dogs and cats) in conjunction with the sponsor‘s permanent change of station is authorized. Other pets or animals are normally prohibited, but may be moved according to DoD 4515.13R.

5.14. Alcoholic Beverages. The MAJCOM/A3/DO may authorize the dispensing of alcoholic beverages.

5.15. Runway, Taxiway, and Airfield Requirements.

5.15.1. Minimum Runway and Taxiway Requirements. Minimum runway length is 7,000 feet. Minimum runway width is 147 feet. Minimum taxiway width is 74 feet.

5.15.2. Runway Length for Takeoff and Landing. Do not takeoff if computed critical field length exceeds runway available. Minimum runway for a normal landing is landing distance based on a threshold crossing height of 50 feet.

5.15.2.1. Intersection Takeoffs. Normally, the PF will initiate takeoffs from the beginning of the approved usable portion of the runway. The decision to make intersection takeoffs rests solely with the PIC.

5.15.2.2. Pilots may accomplish intersection takeoffs provided the operating environment (i.e., gross weight, obstructions, climb criteria, weather, etc.) allows a safe takeoff and departure. Calculate takeoff performance based on the runway remaining from the point at which the takeoff is initiated. In no case will a takeoff be made from a position where less than 7000 feet of runway remains.

5.15.2.3. During operations on runways partially covered with snow or ice, base takeoff computations on the reported runway surface condition (RSC) or RCR for the cleared portion of the runway. A minimum of 50 feet either side of centerline should be cleared. If 50 feet either side of centerline is not cleared, compute takeoff data based on the un-cleared portion up to 50 feet either side of centerline.

5.15.2.4. Use of Overruns. If approach end overruns are stressed and authorized for normal operations, they may be used to increase the runway available for takeoff. Departure end overruns (if stressed and authorized) may also be used for landing if needed.

5.15.2.5. Crews will normally use 0.80 delayed braking factor (DBF) for computing landing distance. PIC‘s may direct using up to 0.90 DBF as an exception on a case by case basis, but must be aware of the resultant increase in brake wear. OG/CC or equivalent approval is required for landings with greater than a 0.90 DBF. When using greater than 0.80 DBF crews will brief the planned braking speed.

5.15.3. Arresting Cables.

5.15.3.1. Do not land on (touchdown on) approach end arresting cables (does not include recessed cables). If the aircraft lands before the cable, the crew should contact the tower to have the cable inspected.

5.15.3.2. Do not takeoff or land over an approach end cable that has been reported as slack, loose, or improperly rigged by NOTAM, automated terminal information service (ATIS), or ATC.

5.15.3.3. Operations are authorized on runways where BAK-12 systems with an eight-point cable tie-down system is installed. When operating from runways equipped with other types of systems, or if it is unknown whether the BAK-12 system includes eight-point tie-downs, aircrews should recognize the increased risk of damage to the aircraft.

5.15.4. Other Airfield Requirements.

5.15.4.1. Consult with HQ AMC/A3AS (Airfield Suitability Branch) for suitability guidance. Once a mission is executed, the PIC is responsible for determining airfield suitability based upon operational need. Airfield certification requirements are detailed in the ASRR.

5.15.4.2. Aircrews and planning agencies will contact HQ AMC/A3AS for all questions pertaining to airfield weight bearing capacity and will review the GDSS/GDSS2(when available)/ASRR before all off-station operations. HQ AMC/A3 is the waiver authority for the restrictions in GDSS/GDSS2 Giant Report and ASRR for AMC and AMC-gained aircraft. Direct GDSS/GDSS2 Giant Report and ASRR waiver requests to HQ AMC/A3VK. HQ AMC/A3VK is the OPR for waivers to airfield restrictions. MAJCOM/A3/DO is the waiver authority for non-AMC missions. The PIC is responsible for waiver compliance. Crews that have access to the World Wide Web will review airfield suitability in the airfield data base via the HQ AMC Aircrew Portal. Consult the ASRR for airfield certification requirements.

5.15.4.3. Operations from RAF Fairford and RAF Mildenhall. An RCR 15 may be used for computing takeoff performance for all operational and training missions when wet runway conditions exist. This authorization does not apply to landing data computations or when standing water is on the runway. Determination of standing water versus wet runway conditions will be made by the 100 OG/CC.

5.16. Aircraft Taxi and Taxi Obstruction Clearance Criteria and Foreign Object Damage (FOD) Avoidance.

5.16.1. Do not taxi an aircraft within 25 feet of obstructions without wing walkers monitoring clearance between aircraft and obstructions. With wing walkers, avoid taxi obstructions by at least 10 feet from any obstruction.

EXCEPTION:
IAW AFI 11-218, aircraft may taxi without marshallers/wing walkers at home station along locally established taxi lines which have been measured to ensure a minimum of 10 feet clearance from any obstruction and the obstruction is permanent.

5.16.2. When taxi clearance is doubtful, use one or more wing walkers. If wing walkers are unavailable, deplane one or more crewmembers to maintain obstruction clearance and provide marshaling using AFI 11-218 signals. Use wing walkers, deplaned crewmembers, or a crewmember on interphone to act as an observer while maneuvering on narrow taxiways. During night taxi operations, marshallers will have an illuminated wand in each hand. Wing walkers are only required to have one illuminated wand. Observers should be in a position to see wing walkers at all times (through door or windows) and communicate with the pilot.

5.16.3. FOD Avoidance**.** Make every effort to minimize the potential for engine FOD. Crews should:

5.16.3.1. Carefully review airfield layout paying particular attention to taxi routes, turn requirements, and areas for potential FOD.

5.16.3.2. Minimize power settings during all taxi operations.

5.16.3.3. Where possible, avoid taxi operations that position an engine over an unprepared or un-swept surface. If unavoidable, leave the engine in idle (to the maximum extent possible) until the engine is over an improved surface.

5.17. Not Used.

5.18. Fuel Jettison Procedures. MAF policy is to avoid fuel jettisons, unless safety of flight dictates an immediate jettison (as determined by the pilot in command). In non-emergency situations, emphasis should be placed on finding a constructive use of the fuel onboard before resorting to fuel jettison.

5.18.1. For missions tasked by higher headquarters C2 agencies, the tasking C2 agency may authorize fuel jettison when an urgent operational requirement dictates immediate recovery and reconstitution of the aircraft and/or aircrew. The tasking C2 agency may provide fuel jettison instructions in the OPORD, mission directive, SPINS, etc.

5.18.2. For missions executed from home station, the OG/CC may approve fuel jettisoning when an urgent operational requirement exists to expedite recovery/reconstitution of an aircraft and/or aircrew. In rare circumstances, it may be reasonable to jettison fuel during rapidly deteriorating weather conditions.

5.18.3. For training missions not involving emergency situations or operational necessity, the following courses of action will be taken when aircraft gross weight exceeds normal landing gross weight limits established in technical orders or command directives:

5.18.3.1. Accomplish continuation training events.

5.18.3.2. Seek additional receivers through C2 agencies (if applicable).

5.18.3.3. Seek approval for landing above 200,000 lbs IAW para. **9.10.7.3**.

5.18.3.4. After exhausting all alternatives, the pilot in command will obtain approval from tasking C2 agency (OG/CC for all missions recovering at home station) to jettison the minimum amount of fuel required to land.

5.18.4. All fuel jettisons will be followed up with a detailed report filed by the PIC immediately after landing (utilize AMC Form 97, **AMC In-Flight Emergency and Unusual Occurrence Worksheet**). Submit AMC Form 97 through unit OGV to AMC/A3V. Unit OGV will retain AMC Form 97 for 6 months. Document all pertinent information, including the following items:

5.18.4.1. Scheduled duration.

5.18.4.2. Actual duration.

5.18.4.3. Landing gross weight.

5.18.4.4. Computed stopping distance.

5.18.4.5. Recovery field.

5.18.4.6. Runway available.

5.18.4.7. Jettison altitude/location.

5.18.4.8. Jettison amount.

5.18.4.9. Reason for jettison.

5.18.4.10. Approval authority.

5.18.5. OG/CCs will establish jettison areas and procedures to minimize the impact of fuel jettisoning. Ideally, establish jettison areas at altitudes above 20,000 feet above ground level, off published airways, avoiding urban areas, agricultural regions, and water supply sources.

5.19. Aircraft Speed. Comply with requirements established in AFI 11-202V3. IAW applicable tech orders, aircraft may exceed 250 KIAS or in-flight minimum maneuver speed below 10,000 feet to safely accomplish formation departure rejoins. Once rejoined, all formation aircraft may exceed 250 KIAS below 10,000 feet only to accommodate the minimum maneuver speed of the heaviest formation aircraft.

5.20. Bird/Wildlife Aircraft Strike Hazard (BASH) Programs. BASH programs are centralized unit efforts that provide information cross-feed, hazard identification, and a consolidated course of action. As a minimum, unit commanders must implement the following procedures:

5.20.1. Ensure compliance with the following Bird Watch condition restrictions.

5.20.1.1. Bird Watch Condition Low - No operating restrictions.

5.20.1.2. Bird Watch Condition Moderate - Initial takeoffs and final landings allowed only when departure and arrival routes will avoid bird activity. Local IFR/VFR traffic pattern activity is prohibited.

5.20.1.3. Bird Watch Condition Severe - All takeoffs and landings are prohibited. Waiver authority is local OG/CC or equivalent. Parent MAJCOM/A3/DO waiver is required to operate at airfields not controlled by the MAF.

5.20.2. Commanders establish Phase II of the BASH program during increased periods of migratory bird activity. Schedulers shall make every effort to not schedule takeoffs and landings from one hour before to one hour after sunrise and sunset during the Phase II period. Publish significant bird hazards in FLIP Area Planning (AP) and the IFR Supplement along with the associated airfield operating hour restrictions and avoidance instructions.

5.20.3. When operating at airfields where no BASH program exists, a PIC has the authority to delay takeoffs and arrivals due to bird condition after coordinating with the appropriate C2 authority.

5.20.4. Consider bird migratory patterns during the en route portion of the mission to help minimize the potential of an in-flight bird strike. The Bird Avoidance Model (BAM) on HQ AFSC/SEF website contains BASH information including regionalized Continental United States (CONUS) bird migration patterns, Portable Flight Planning System (PFPS) software overlay, and the latest news. The Avian Hazard Advisory system (AHAS) website is another source for real time bird hazard information. Both sites may be accessed through the AMC aircrew mission planning portal. See AFPAM 91-212, *Bird/Wildlife Aircraft Strike Hazard (BASH) Management Techniques*, for additional information.

5.20.5. Following a bird strike, aircrews should land as soon as conditions permit, or as practicable, to have the aircraft inspected by qualified maintenance personnel. Bird strike damage cannot be accurately assessed in-flight, and undetected damage may result in a complex airborne emergency; only qualified maintenance personnel, on the ground, can make reliable damage assessments.

5.21. Functional Check Flights (FCFs), Acceptance Check Flights (ACFs) and Operational Check Flights (OCFs). Check flights will be accomplished IAW T.O. 1C-135-6, *Aircraft Scheduled Inspections and Maintenance Requirements*, AFI 21-101, *Aircraft and Equipment Maintenance Management*, T.O. 1-1-300, *Functional Check Flights and Maintenance Operational Checks*, and T.O. 1C-135-6CF-1, *Acceptance and/or Functional Check Procedures Manual.* Crews should only perform tasks or functions contained in specific Technical Order guidance. If requested to perform a non-standard function, PICs should contact their OG/CC to see if an FCF applies.

5.21.1. FCF Restrictions. See T.O. 1-1-300.

5.21.1.1. The OG/CC, or deployed equivalent, may authorize temporary waivers to FCF procedures for aircrew qualification when operationally necessary. Permanent waivers require MAJCOM/A3/DO approval IAW **Chapter 1**.

5.21.1.2. The OG/CC is responsible for the wing FCF program. Publish additional guidance in local supplement to this instruction.

5.21.1.3. Conduct check flights within the designated check flight airspace of the base from which the flight was launched except when the flight must be conducted under specific conditions, not compatible with local conditions and area restrictions.

5.21.1.4. The decision to approve a combined FCF and ferry flight is the responsibility of the MAJCOM/A3/DO.

5.21.1.5. The OG/CC will only certify highly experienced instructors as FCF crewmembers. The OG/CC will determine FCF crew complement after a thorough ORM assessment for that specific FCF flight.

5.21.1.6. Ideally, conduct FCFs in daylight, VMC. OG/CCs may authorize a flight under a combination of VMC and IMC. Begin the flight in VMC. If the aircraft and all systems are operating properly, the crew may proceed IFR through cloud cover to ―VFR on Top" for the altitude phase of the flight.

5.21.1.7. If a malfunction occurs during a FCF, the MXG/CC may subsequently release the aircraft for flight providing the malfunction is not related to the condition generating the FCF, and the original condition operationally checked good.

5.21.1.8. Only FCF crews shall perform high-speed taxi checks. Perform checks IAW the flight manual and maintenance technical orders. Prepare the aircraft with minimum fuel necessary to accomplish the check to limit brake/tire wear, (ensure fuel on board will permit a safe return to base should the aircraft unexpectedly become airborne) and turn on the anti-skid system. The PIC will calculate takeoff data for the highest speed planned and ensure runway available allows sufficient stopping distance for existing conditions without exceeding normal brake energy limits.

5.22. Participation in Aerial Events. See AFI 11-209, *Air Force Participation in Aerial Events*, and the appropriate MAJCOM supplement.

5.23. Not Used.

5.24. Traffic Alert and Collision Avoidance System (TCAS). It is imperative to follow resolution advisories (RAs) to obtain aircraft separation computed by TCAS. Failure to follow the computed RA may increase the probability of a midair collision. Pilots who deviate from an ATC clearance in response to an RA shall notify ATC of the deviation as soon as practical and promptly return to the ATC clearance when the traffic conflict is resolved or obtain a new clearance.

5.24.1. Operate the TCAS with sensitivity set to Traffic Advisory/Resolution Advisory (TA/RA) at all times except when in cell formation, during air refueling, or when operational necessity dictates.

5.25. Aircraft Recovery from Unprepared Surfaces. Aircrews will not normally attempt to recover an aircraft after inadvertent entry onto unprepared surfaces not suitable for taxi; ground crews will accomplish aircraft recovery. Unless an emergency dictates otherwise, aircrews may only accomplish recovery if there is no aircraft damage, the surface will support the aircraft, and the PIC has coordinated with appropriate MAJCOM headquarters maintenance authorities through 618 TACC, or appropriate C2 agency.

Chapter 6

AIRCREW PROCEDURES

Section 6A—Pre-Mission

6.1. Aircrew Uniform.

6.1.1. Aircrew will wear the aircrew uniform, as outlined in AFI 36-2903, *Dress and Personal Appearance of Air Force Personnel,* and the appropriate MAJCOM supplement, on all missions, unless otherwise authorized. When the Foreign Clearance Guide (FCG) requires civilian attire, dress conservatively.

6.1.2. OG/CCs will determine clothing and equipment to be worn or carried aboard all flights commensurate with mission, climate, and terrain involved.

6.1.2.1. See AFI 11-301V1, *Aircrew Life Support System (ALS) Program*, for minimum aircrew clothing requirements. All crewmembers will have Nomex gloves in their possession.

6.1.2.2. Crewmembers will remove rings and scarves before performing aircrew duties.

6.1.3. Personnel will have appropriate items of clothing in their possession when flying in Arctic and Antarctic regions. ***EXCEPTION* :** Not applicable to transoceanic flights or when staging or transiting Elmendorf AFB AK.

6.2. Personal Requirements

6.2.1. Refer to current Unit Deployment Manager guidance for applicable deployment requirements.

6.2.2. Passport. Crewmembers will carry a valid passport on all missions outside the CONUS.

EXCEPTION:
Unit commanders may authorize newly assigned personnel who have applied for, but not yet received, a passport to act as crewmembers on missions not scheduled to transit locations where passports are required.

6.2.3. Shot Record. Crewmembers must maintain worldwide shot requirements and carry their shot records on all missions outside the CONUS (except overseas units on local training missions).

6.2.4. Driver‘s License. A valid state driver‘s license is required on each TDY where use of US government general purpose vehicles may be required. Crewmembers will contact the local airfield manager before driving on the flight line.

6.2.5. Identification Tags. Crewmembers will wear or carry two identification tags on all flights.

6.2.6. FOD Hazards. Crewmembers will not wear wigs, hairpieces, rings, ornaments, or earrings in the aircraft or on the flight line.

EXCEPTION:

Crewmembers may wear plain elastic hair fasteners and/or pins, clips, or barrettes providing they do not interfere with the wearing of headsets, or the donning of oxygen equipment. They will be accounted for before and after flight.

6.2.7. Flashlights. Each crewmember must have an operable flashlight for night flights.

6.2.8. A reflective belt or suitable substitute will be worn on flight lines during hours of darkness or periods of reduced visibility.

6.2.9. Helmets and oxygen masks. Crewmembers will carry a personal helmet:

6.2.9.1. Whenever the aircrew requires flash-blindness devices (PLTZ goggles/MIL-G goggles)

6.2.9.2. When required for wear of the aircrew chemical defense ensemble.

6.3. Pre-mission Actions.

6.3.1. Before transiting areas outside the CONUS, aircrews will review theater-specific information necessary to successfully operate there. The review should include (but is not limited to):

6.3.1.1. Tasking, itinerary, and altitude reservation (ALTRV) requirements.

6.3.1.2. Applicable OPORD, SPINS, Risk Assessment Database (RAD), Country Risk Assessment (CRA), and FLIP.

6.3.1.3. FCG for areas of operation (to include classified portion). Obtain necessary diplomatic clearances where required.

6.3.2. Obtain required customs forms.

6.3.3. Obtain worldwide FLIP, DAFIF, and sufficient communications security (COMSEC) materials for the duration of the mission.

6.3.4. Ensure physiological training, annual physical, immunizations, and flight evaluations will remain current for all crewmembers throughout the TDY period.

6.3.5. Ensure visas have been received, if required.

6.3.6. Obtain terrain charts for unfamiliar destinations if available.

6.3.7. Compile sufficient spare forms, flight orders, etc. to cover the TDY period.

6.3.8. Release available seats to passenger terminal. Coordinate with C2 agency to release available seats to the passenger terminal.

6.4. Aircrew Publications Requirements. Primary crewmembers will carry (or have in-flight access to) the publications specified in **Table 6.1** on all missions. Units may specify additional publications in their local unit supplement to this instruction.

Table 6.1. Aircrew Publications

Publication/Nomenclature	PIC	P	N	BO
T.O. 1C-135(K)*(I)-1, In-flight Manual		X		
*(I)-1CL-1, Pilot Checklist	X	X		

Publication/Nomenclature	PIC	P	N	BO
*(I)-1CL-2, Nav Checklist			X	
*(I)-1CL-3, BO Checklist				X
T.O. 1C-135(*)*-1-1, Performance Manual		X		
ATP 56(B), NATO Air to Air Refueling (Applicable Parts)		X		
T.O. 1-1C-1-3, AR Tanker		X		
-3CL-1, AR Tanker Pilot/Nav Checklist	X	X	X	
-3CL-3, AR Tanker BO Checklist				X
T.O. 1-1C-1-14, AR Receiver (If Required)		X		
-14CL-1, AR Receiver Pilot Checklist (If Required)	X	X		
-14CL-2, AR Receiver Nav Checklist (If Required)			X	
-14CL-3, AR Receiver BO Checklist (If Required)				X
T.O. 1C-135-9, Cargo Loading Manual				X
-9CL-1, Cargo Loading Checklist				X
AFI 11-202, Volume 3, *General Flight Rules*	X			
AFI 11-2KC-135, Volume 3, C/KC-135 Operations	X			

6.5. Airfield Review. Aircrews will consult the web based airfield database maintained by HQ AMC/A3AS (Airfield Suitability Branch) and comply with the GDSS/GDSS2/ASRR for updates to airfield operability and weight bearing capability. Refer to AFI 11-202V3 Chapter 8. for non-DoD published approach criteria.

6.6. Aircrew Intelligence Briefing. Aircrews will receive an intelligence briefing that will emphasize terrorist, enemy, and friendly political and military development in the area in which they will be flying. Obtain timely intelligence updates prior to entering a specific area of operations (AOR). In theater, aircrews should receive intelligence updates on initial arrival at a forward operating location (FOL), or en route stop, and thereafter when significant developments occur. Report information of possible intelligence value to the local intelligence office as soon as practical to ensure timely dissemination of mission reports (MISREPs).

Section 6B—Pre-Departure

6.7. Integrated Management Tool (IMT)/GDSS2 Web Account. Pilots will obtain an IMT account prior to operating on IFM-planned sorties. Download aircrew departure papers using the IMT account, at locations without an AMC C2 presence. For operational missions, ensure IMT account passwords are active prior to departing home station.

6.8. Flight Crew Information File (FCIF).

6.8.1. Crewmembers will review FCIF Volume 1 before all missions or ground aircrew duties, and update the FCIF currency record with the latest FCIF item number, date, and crewmember‘s initials.

6.8.1. **(AETC)** Units will establish procedures for updating aircrew off-station. At a minimum, crews will be notified of any safety related issues.

6.8.1.1. Electronic signatures may be used on FCIFs.

6.8.2. Crewmembers delinquent in FCIF review or joining a mission en route will receive an FCIF update from the PIC.

6.8.3. Crewmembers not assigned or attached to the unit operating a mission will certify FCIF review by entering the last FCIF number and their initials behind their name on the file copy of the flight authorization or file copy of their crew orders.

6.9. Flight Crew Bulletins (FCB). Items in the FCB may include local procedures and policies concerning equipment and personnel generally not found in any other publications.

6.10. Mission Kits. Carry mission kits on all operational missions. Suggested items include:

NOTE:
* Indicates mandatory for all missions away from home station.
Items may be maintained and carried electronically provided operable in-flight viewing capability exists.

6.10.1. Publications:

6.10.1.1. *AFI 11-401, *Aviation Management*.

6.10.1.2. *DESC-I-31, *Purchase of Aviation Fuel and Services at Commercial Locations.*

6.10.1.3. *AFJI 11-204, *Operational Procedures for Aircraft Carrying Hazardous Materials.*

6.10.1.4. *AMCI 11-208, *Tanker/Airlift Operations*.

6.10.1.5. *Airfield Suitability and Restrictions Report (ASRR).

6.10.1.6. *AMC Aircrew Border Clearance Guide.

6.10.1.7. *AMC Handbook 11-214, *AMC Aircrew Hazardous Materials Handbook.*

6.10.1.8. *Flight Crew Bulletin (FCB).

6.10.1.9. AFI 11-289, *Phoenix Banner, Silver, Copper Operations.*

6.10.1.10. *AMCP 11-3, *Birds Fly Free, AMC Doesn’t*

6.10.2. Forms:

6.10.2.1. *CBP Form 6059B, **Customs and Border Protection Declaration Form, U.S.**

6.10.2.2. *DD 2131, **Cargo/Passenger Manifest**.

6.10.2.3. *CBP Form 7507, **General Declaration (Outward/Inward)**.

6.10.2.4. *AF Form 15, **United States Air Force Invoice**.

6.10.2.5. *SF44, Purchasing Fuel at Commercial Airport Facilities

6.10.2.6. AF Form 457, **USAF Hazard Report**.

6.10.2.7. *AF Form 651, **Hazardous Air Traffic Report (HATR)**.

6.10.2.8. *AFTO Form 781, **ARMS Aircrew/Mission Flight Data Document**

6.10.2.9. *AF Form 1297, **Temporary Issue Receipt**.

6.10.2.10. *AF Form 3578, **Tanker Activity Report**.

6.10.2.11. AF Form 4044, **KC-135 Cargo/Passenger Planning Data**

6.10.2.12. *AF Form 4100, **KC-135 Load Planning Worksheet**

6.10.2.13. *AF Form 4112, **KC-135 Restraint Computation Worksheet**

6.10.2.14. Not Used

6.10.2.15. AMC Form 54, **Aircraft Commander's Report on Services/Facilities**

6.10.2.16. AMC Form 97, **AMC In-Flight Emergency and Unusual Occurrence Worksheet**

6.10.2.17. AF Form 711B, **USAF Mishap Report**.

6.10.2.18. *AF Form 4031, **Crew Resource Management (CRM) Assessment Sheet**.

6.10.2.19. *AF Form 4075, **Aircraft Load Data Worksheet**.

6.10.2.20. *DD791, **DoD In-Flight Issue Log**

6.10.2.21. Japanese Customs Service Forms.

6.10.3. Orders:

6.10.3.1. AF Form 1631, **NATO Travel Orders (when required).**

6.10.3.2. *AF Form 4327a, **Crew Flight (FA) Authorization** (or MAJCOM prescribed according to AFI 11-401, *Flight Management).*

6.10.4. Miscellaneous:

6.10.4.1. *Box car seals.

6.10.4.2. *Masking tape.

6.10.4.3. KC-135 Stratotanker Passenger Safety Video DVD PIN# 61212.

6.11. Route Navigation Kits

6.11.1. A route navigation kit is issued at home station and remains with the aircraft until return. Kits contain sufficient quantities of material to cover the planned mission and global operations as required.

6.11.2. The minimum contents of route navigation kits are in **Table 6.2**.

6.11.3. On local unit training sorties, local area navigation kits may be used in lieu of route navigation kits in **Table 6.2**. Contents of these kits will be determined by the unit.

Table 6.2. Route Navigation Kit Contents.

ITEM (APPLICABLE TO AREA OF OPERATION (AOR))	NUMBER
FLIP Planning Documents (sections GP, AP/1, AP/1A, AP/1B, AP/2, AP/2A, AP/3, AP/3A, AP/4)	1
FLIP En route Supplements (US IFR, US VFR, CSA, ENAME, EEA, Africa, PAA)	1
FLIP Flight Information Handbook	1
FLIP En route Charts (High and Low)	1
FLIP Terminal Instrument Procedures (High and Low)	3
Standard Terminal Arrival Routes (STAR)	3
Topographical and Sectional Charts for AOR (GNC/OPC/TPC/JNC) (Falconview Charts may be used if charts are unavailable)	as required
DoD Area Arrival Charts.	(1) if available

6.12. Briefing Requirements.

6.12.1. Pre-Departure Briefing Items. The PIC will contact the local C2 agency to confirm mission requirements. The PIC and controlling agency jointly share responsibility to identify special briefing requirements. Briefings may include buffer zone, electronic warfare activities, SAFE PASSAGE, Electromagnetic Interference (EMI), diplomatic clearance, hazardous cargo, anti-hijacking procedures, operations and safety supplements to flight manuals, and OPORD procedure.

6.12.2. Pilot in Command Briefing. Cover all applicable items of the operations briefing, including MAJCOM, NAF, and unit special interest items (SII). Brief crewmembers on the specific mission details if not previously accomplished. Use a MAJCOM approved briefing guide.

6.12.2.1. In the en route system, the PIC will ensure that an aircrew briefing is conducted prior to the first sortie of the day. As a minimum, brief crewmembers on specific mission details for that day‘s sortie(s) and the ORM level for the mission. Complete this briefing prior to engine start.

6.12.3. Specialized Briefing. Use specialized briefings to detail operating procedures or SIIs peculiar to various crew positions, and to answer questions relating to those specialties. Specialized briefings review formation tactics and procedures, AR information, and technical instructions for specialized equipment operations. All crewmembers should attend each briefing. Crewmembers may only be excused from specialized briefings for pre-flight duties; however the PIC will back brief all appropriate items.

6.12.4. Weather Briefings. The PIC will obtain a briefing on current weather, trends, and forecast for the proposed route, destination, and alternates. The PIC will brief primary crewmembers on appropriate weather conditions before departure.

6.12.4.1. Aircrews flying flight-managed sorties will use the weather briefing provided with the IFM aircrew departure papers. This weather briefing satisfies requirement for **6.12.4**. Local weather flights/agencies may update local takeoff weather data, but aircrews, working through their flight manager/dispatcher, will use 618 TACC weather operations (or the Operational Weather Squadron (OWS) supporting the theater C2 agency) as the final arbiter for weather-related issues and further updates.

6.12.4.2. On sorties not planned by a flight manager, crews should obtain weather information from their local weather flight or the OWS responsible for weather support at their location.

6.12.4.3. If adequate services are not available, and the crew cannot contact their home weather flight, OWS, or 618 TACC weather operations, obtain weather through any means available prior to mission accomplishment.

6.12.4.4. Weather information is permitted from US Military weather services, any FAA-approved weather source, or any host nation civil or military weather source.

6.12.4.5. Verbal weather briefings are authorized for local flights. Face-to-face briefings are not required.

6.12.5. Buffer Zone. Prior to operating an aircraft within or adjacent to an established buffer zone, the PIC will ensure primary crewmembers are briefed on current buffer zone procedures outlined in appropriate directives.

6.12.6. Peacetime and Wartime SAFE PASSAGE Procedures. Pilots must be familiar with peacetime and wartime safe passage of friendly military aircraft.

6.12.7. IFM Briefing. PICs will thoroughly review the aircrew departure papers provided for IFM sorties. When time and circumstances permit, the PIC, or designated representative, will contact the flight manager before signing the flight plan.

6.12.8. **Training/Evaluation Briefing.** Before all training/evaluation missions, instructors/flight examiners should brief their crew on the following additional item: instructors/evaluators (for each crew position) will outline requirements and objectives for each student or examinee.

6.13. Call Signs

6.13.1. Training Missions. Aircraft will use the unit static call sign prefix followed by a 2-digit suffix assigned by the parent unit.

6.13.2. Operational Missions. Use call signs assigned by OPORD, FRAG, or diplomatic clearance. If no call sign has been assigned, use unit static call signs. When flying AMC channel missions, and no other call sign has been assigned, use the ―REACH" call sign followed by the last digit of the year the aircraft was built and the last 3 digits of the aircraft tail number (or as required by diplomatic clearance). To complete flight plans, put the letters "RCH" followed by the last digit of the year the aircraft was built and the last 3 digits of the aircraft tail number.

6.13.3. The Reach 01 and 18 call sign are reserved for the AMC/CC and 18 AF/CC.

6.13.4. Aeromedical Evacuation (AE). For actual AE missions, use the call sign ―Evac" followed by the five-digit aircraft number (example, Evac 12345) or mission designator. Refer to FLIP GP Chapter 4. When the AE portion of the mission is completed, normal call signs will be used. This does not alleviate the responsibility to use diplomatically cleared call signs when required.

6.14. Instrument Flight Rules. Conduct flight operations under IFR to the maximum extent possible without unacceptable mission degradation.

6.15. Flight Plan Verification

6.15.1. Computer Flight Plan (CFP) Use. CFPs are the official sources of performance, navigation, and climatic data, including en route wind information. If stand-alone computer based plans are used, each mission segment should utilize best wind data available. Use only command validated (HQ/AMC/A3V) CFPs.

6.15.1.1. Use CFPs to the maximum extent practical. Flight crews may manually compute flight plans. The PIC has final responsibility for flight plan accuracy and diplomatic clearance compliance.

6.15.1.2. Verify CFPs for route of flight and fuel computation accuracy before departure. Pass any flight plan discrepancies to the C2 Flight Planning Office. On IFM sorties, promptly notify the flight manager of any flight plan discrepancies, to ensure the correct route of flight is filed with air traffic control. Identify inaccurate CFP winds to 618 TACC/XOCZF if the average wind for a route segment exceeds either 30° error in direction or 25 knots in speed.

6.16. Departure Planning. Use AFI 11-202V3, AFMAN 11-217V1, this chapter, and appropriate MAJCOM supplements. Regardless of the type of departure flown (IFR/VFR), review the following (as appropriate): IFR Departure Procedure, instrument approach procedures, NOTAMS, GDSS, Giant Report, and suitable terrain charts. All performance data computations will be reviewed by both pilots. Ensure that the DAFIF image file on FMS PCMCIA card is current for date(s) of flight.

6.16.1. VFR Departures.

NOTE:
VFR departures will not be flown in lieu of obstacle clearance planning.

6.16.1.1. VFR departures are authorized when there is no authorized IFR departure method for the airport, when the aircraft cannot depart using one of the IFR departure methods contained in AFI 11-202V3 and AFMAN 11-217V1, when operational requirements dictate (i.e. tactical necessity), or when most of the mission is planned as a VFR flight for training. VFR departures require detailed planning to ensure obstacles and high terrain are avoided.

6.16.1.2. The minimum climb performance for VFR departures is determined by ensuring all the following conditions are met:

6.16.1.2.1. All-engine climb capability ensures obstacle avoidance along the departure route.

6.16.1.2.2. One Engine Inoperative (OEI) climb capability shall ensure departure or emergency return route provides obstacle avoidance.

NOTE:
If unable to comply with any of the above conditions, download cargo/fuel or delay until conditions that are more favorable exist.

6.16.1.3. Pilots will refer to FLIP for host nation VFR requirements before flying VFR outside of CONUS.

6.16.1.4. When departing VFR, maintain VFR cloud clearances until obtaining an IFR clearance or reaching the IFR MEA.

6.16.2. IFR Departures: Aircrews must use an approved IFR departure method as outlined in AFI 11-202V3, and AFMAN 11-217V1.

6.16.2.1. If the airport does not have an authorized IFR departure method, depart VFR IAW paragraph **6.16.1**. An IFR departure is not authorized at airfields without an instrument approach.

6.16.2.2. IFR departures require detailed planning to ensure obstacles and high terrain are avoided. Adhere to screen height/departure end of runway (DER) requirements for IFR departure planning (AFMAN 11-217V1).

NOTE:
Screen height requirements for departures depend on the agency that wrote the departure and/or the airfield where the departure is being flown. There is no standard or easy way for crews to determine screen height requirements. Therefore, when using departures other than those listed below, or when any doubt exists about which screen height to use, plan to cross the DER at 35 feet (minimum) unless you can ascertain a different screen height requirement from an appropriate authority.

6.16.2.2.1. USAF/USN produced SID or USAF/USN/USMC airfield: Zero feet.

6.16.2.2.2. US Army, FAA SID, and Joint Use Airfield within the US: 35 feet unless published.

6.16.2.2.3. NATO Countries (except US and Canada) Military Airports: 35 feet.

6.16.2.2.4. NATO Countries (except US and Canada) Civil Airports: 16 feet or as published.

6.16.2.2.5. Other ICAO nations: 16 feet or as published.

6.16.2.2.6. Special Departure Procedure: Published on SDP.

6.16.2.2.7. All others: 35 feet unless published.

6.16.2.3. Aircraft must be able to meet the published climb gradient for the departure runway with all engines operating. If no minimum climb gradient is published, 200 ft/nm will be used.

NOTE:
In the event the aircraft is unable to meet the published ALL ENGINE climb gradient, download cargo/fuel or delay until conditions that are more favorable exist.

6.16.2.4. The following methods are provided to ensure the aircraft can vertically clear all obstacles along the planned departure route with One-Engine Inoperative (OEI):

6.16.2.4.1. Published climb gradient. The TERPS standard minimum climb gradient is 200 ft/nm, which is based on the standard obstacle clearance surface (OCS) of 152 ft/nm plus the required obstacle clearance (ROC) of 48 ft/nm. Crews must ensure compliance with any obstacle-based minimum climb gradients for the selected departure, with one-engine inoperative. Minimum climb gradients may be published as a _Trouble T‘ restriction in the IFR Take-off Minimums section of FLIP or on a SID.

6.16.2.4.1.1. When mission priority justifies the increased risk, crews may subtract 48‘/nm from published climb gradient before computing engine-out takeoff data. This number will never be below 152 ft/nm. Refer to AFI 11-202V3 for further decision making guidance.

6.16.2.4.2. KC-135R/T. Special Departure Procedures (SDP) are MDS-specific, OEI, airfield specific escape procedures and where available, will be used for one engine-out departure planning. Retrieve current KC-135 SDPs from the Jeppesen AF Opsdata website: **https://www.jeppesen.com/wlcs/commerce/login.jsp**, username is ~~"u~~safsdp" and password is ~~"a~~ircrews". _Ad hoc‘ requests for fields not currently listed may be requested through OGV/OSO NLT 48 hrs prior to scheduled departure. Ad Hoc SDPs are valid while they remain on the Jeppesen Opsdata website. The SDP analysis date is located in the upper left-hand corner of the SDP takeoff performance sheet. PICs must ensure that the most current SDP is used.

6.16.2.4.3. Minimum climb gradients do not take into account low, close in obstacles (obstacles or terrain 200‘ AGL and below) which should normally be published as a NOTE on the SID or IFR departure procedure (Trouble T).

6.17. Weather Minimums for Takeoff

Table 6.3. Weather Minimums for Takeoff.

MISSION	VIS	REMARKS
Operational	1000 RVR (305 meters)	When less than RVR 1600, but equal to or greater than RVR 1000, the crew may take off if mission priority dictates, provided the runway has dual RVR readouts and displays (minimum RVR 1000 on both) and runway centerline lighting is operational. For any takeoff below 1600 RVR, the crew must be fully qualified.
All others	1600 RVR (488	For runways with more than one operating RVR readout, RVR must read 1600 minimum on all.

	meters)	

NOTE:
If no RVR readout is available for the departure runway, visibility must be reported to be 1/2 mile (800 meters).
When weather is below approach and landing minimums (ceiling or visibility) a takeoff alternate is required (See paragraph **6.19**)

6.18. Alternate Planning. Select alternate airports meeting the requirements of AFI 11-202V3. Choose alternates that best meet mission requirements and conserve fuel; they should not be within the same terminal area, if terminal forecasts are marginal. Select alternates that are not restricted by FLIP, FCG, or diplomatic clearances, and are compatible with the mission load and performance characteristics of the aircraft. The PIC retains final authority in the choice of alternates; however, selection by support agencies normally should be used if they meet the above criteria and the aircraft has already been serviced. See **Chapter 14** for specific fuel planning requirements.

6.19. Departure Alternates.

6.19.1. A departure alternate is required if weather is below landing minimums for the lowest suitable approach (at departure aerodrome). If planning an ILS approach, CAT 1 minimums will be used.

6.19.2. Suitability of Departure Alternates. When a departure alternate is required, the aircraft must be capable of maintaining the MEA or minimum obstruction clearance altitude (MOCA), whichever is higher, to the alternate using OEI performance criteria. To qualify as a departure alternate, the airfield must meet one of the following conditions:

6.19.2.1. For an alternate within 30 minutes flying time, the existing weather must be equal to or better than the published approach minimums and forecast to remain so until 1 hour after takeoff, but in no case forecast to be lower than 200-1/2 (RVR 2400), or;

6.19.2.2. For an alternate within two hours flying time, the existing weather must be at least 500-1 above the lowest compatible published approach minimums, but not less than 600-2 for a precision approach or 800-2 for a non-precision approach, and forecast to remain so for 1 hour after ETA at the alternate.

6.20. Destination Requirements (*for filing purposes*). The forecast destination weather will be according to AFI 11-202V3, and the following:

6.20.1. File two alternates when:

6.20.1.1. The forecast visibility (intermittent or prevailing) is less than published for the available DoD or National Aeronautical Charting Office (NACO) precision approach.

6.20.1.2. The forecast ceiling OR visibility (intermittent or prevailing) is less than published for all other approaches. For approaches with no published ceiling requirement (for example Jeppesen approaches), the minimum required ceiling shall be computed by taking the published HAA or HAT and rounding it up to the nearest one hundred feet (or as determined by MAJCOM TERPs review). For example, a Jeppesen VOR approach with a published HAA of 642 feet would require a forecasted ceiling of 700 feet.

6.20.1.3. The forecast surface winds (intermittent or prevailing) exceed limits corrected for RCR.

6.20.2. File an alternate, regardless of forecast weather, when the departure or destination aerodrome is outside the CONUS. ***EXCEPTION***: OCONUS, intra-theater flights that do not exceed 3-hours, comply with basic AFI 11-202V3.

6.20.3. When filing to a remote or island destination, aircrews may use 2+00 holding fuel (in lieu of an alternate). A remote or island destination is defined as any aerodrome, which due to its unique geographic location, offers no suitable alternate (civil or military) within 2 hours flying time. The forecast weather at the remote or island destination must meet the following criteria:

6.20.3.1. The prevailing surface winds, corrected for RCR, must be within limits at ETA and forecast to remain so for 2 hours thereafter, and

6.20.3.2. The prevailing ceiling and visibility must be equal to or greater than published minimums for an available non-precision approach, for ETA plus 2 hours. However, if a precision approach is available, the ceiling or visibility may be intermittently below non-precision approach minimums (excluding ASR), but not below precision approach minimums (for ETA plus 2 hours).

NOTE:
See **Chapter 14** for fuel planning considerations to a remote or island destination.

6.21. Adverse Weather.

6.21.1. Flight into areas of forecast or reported severe turbulence is prohibited.

6.21.1.1. The KC-135 is a category II aircraft for turbulence. Crews should confirm the type of aircraft the forecast turbulence applies to, or what type of aircraft reported the encounter, to gain a more accurate picture for their route of flight. Turbulence category charts are found in Air Force Weather Agency technical note AFWA/TN 98/002, *Meteorological Techniques*.

6.21.1.2. The PIC is responsible for ensuring all passengers are seated, with seat belts fastened, when areas of moderate or greater turbulence are encountered or anticipated.

WARNING:
Serious injury may occur if passengers do not have their seat belts fastened and the aircraft encounters moderate or severe turbulence.

6.21.2. Flight into areas of forecast or reported severe icing is prohibited. Prolonged operation, such as cruise flight or holding, in areas of moderate icing should be avoided.

NOTE:
Air Force Weather Agency technical note AFWA/TN 98/002, *Meteorological Techniques*, states that freezing drizzle is equivalent to moderate icing and freezing rain is equivalent to severe icing.

6.21.2.1. Do not takeoff under conditions of freezing rain. Do not takeoff under conditions of freezing drizzle except when aircraft has been properly de-iced/anti-iced IAW flight manual procedures.

6.21.2.2. Freezing precipitation, snow, freezing fog, or temperatures near 0°C, may cause ice or frost to accumulate on aircraft surfaces. When an aircraft requires de-icing/anti-icing prior to takeoff, refer to the following:

6.21.2.2.1. Aircrews will only use de-ice and anti-ice fluids listed in their respective flight manual. Aircrews will be familiar with, and follow all restrictions in their associated flight manual with respect to anti-ice/de-ice procedures and holdover times.

6.21.2.2.2. MIL-A-8243 Type I and Type II de-icing fluids do not provide any anti-icing benefit, and therefore do not have holdover times. As a guide, for approved anti-icing fluids, crews may use published anti-icing holdover times IAW TO 42C-1-2, Aircraft Anti-icing Procedures, and AFFSA holdover tables located at the HQ AFFSA website. The holdover time begins when anti-icing fluid is first applied and the PIC shall use time, temperature, and dilution of mixture to determine when times are exceeded and re-apply fluid if required.

6.21.2.2.3. In all cases, PICs will ensure a visual inspection of the aircraft is completed within 5 minutes of departure.

6.21.3. Do not fly directly above (within 2,000 feet) thunderstorms or cumulonimbus clouds. If unable to vertically clear thunderstorms or cumulonimbus clouds by at least 2000 feet, avoid them by at least:

6.21.3.1. 20 NMs at or above flight level (FL) 230.

6.21.3.2. 10 NMs below FL230

CAUTION:
Aircraft damage may occur 20NMs or more from any thunderstorms. Aircrews must familiarize themselves with information on thunderstorm development and hazards. Refer to AFH 11-203, *Weather for Aircrews*.

6.21.4. The use of ground-based radar as a means of thunderstorm avoidance should only be used to assist in departing an inadvertently penetrated area of significant weather. It should never be considered a normal avoidance procedure. When relying exclusively on ground-based radar for weather avoidance, and the ground controller is unable to provide avoidance instructions, attempt to maintain VMC by:

6.21.4.1. Changing routing.

6.21.4.2. Diverting to alternate.

6.21.4.3. Declaring an emergency and requesting priority assistance.

6.21.5. Aircrews should avoid flying in areas of recently dissipated thunderstorms and advective clouds (horizontal movement of clouds caused by wind) downwind of thunderstorms.

6.21.6. In order to minimize exposure to thunderstorm hazards when approaching or departing an airport in an area where thunderstorms are occurring or are forecast:

6.21.6.1. Attempt to maintain VMC

6.21.6.2. Maintain at least 5NMs separation from heavy rain showers

6.21.6.3. Avoid areas of high lightning potential, i.e., clouds within plus or minus 5,000 feet of the freezing level or plus or minus 8°C of the freezing level.

NOTE:
Approaches or departures may be accomplished when thunderstorms are within 10NMs providing they are not producing any hazardous conditions (such as hail, lightning, strong winds, gusts fronts, heavy rain, wind shear, or microburst) at the airport, and are not forecast or observed to be moving in the direction of the route of flight (to include the planned missed approach corridor, if applicable).

6.21.7. When performing approaches and landings at locations where temperatures are 0°C or below, refer to 11-202V3 Chapter 8 and the *Flight Information Handbook* (FIH) Section D, Temperature Correction Chart.

6.21.8. Do not fly into an area of known or forecast moderate or greater mountain wave turbulence.

6.21.9. Significant Meteorological Information (SIGMET). National Weather Service in-flight weather advisories are not limiting to Air Force aircraft; contact nearest military weather facility or flight service station for details, if applicable.

6.21.10. Volcanic Dust Precautions. Aircraft flight operations in areas of forecast or known volcanic activity or dust is prohibited. Plan all missions to avoid volcanic activity by at least 20 NMs.

6.21.11. Lightning Avoidance. The following conditions are most conducive to lightning strikes and prolonged flight in them should be avoided:

6.21.11.1. Within 8°C of the freezing level.

6.21.11.2. In clouds or in any intensity of precipitation or turbulence associated with thunderstorm activity.

6.22. Operational Risk Management (ORM) ORM is a logic based, common sense approach to making calculated decisions on human, material, and environmental factors before, during, and after all operations. USAF policy on ORM is contained in Air Force Policy Directive 90-9, *Operational Risk Management.* PICs will accomplish ORM worksheets IAW MAJCOM and local guidance as part of preflight activities.

Section 6C—Preflight

6.23. AFTO Form 781 Series.

6.23.1. Review AFTO Form 781 series before applying power to the aircraft or operating aircraft systems. An exceptional release must be signed before flight. A maintenance officer, maintenance superintendent, or authorized civilian normally signs the exceptional release. If one of these individuals is not available, the PIC may sign the exceptional release. Ensure that the DD1896, **DoD Fuel Identaplate,** and AIR card are aboard the aircraft.

6.23.2. One-Time Flights. An aircraft may be released for a one-time flight with a condition that might be hazardous for continued use, provided the aircraft is airworthy for one flight to another station. Refer to T.O. 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures,* for downgrade authority and procedures. AFRC

crews also see AFI 11-202V3/AFRCSUP1. After the maintenance release is obtained, coordinate mission requirements with the controlling agency. The PIC's concurrence is required before the aircraft can be flown.

6.23.3. For Red X clearing procedures at stations without maintenance support refer to paragraph **12.3**.

6.24. Aircraft Servicing and Ground Operations. Reference paragraph **12.4**.

6.25. Aircraft Recovery Away from Main Operating Base (MOB). Reference paragraph**12.5**.

6.26. Life Support Requirements.

6.26.1. Oxygen. For flights where the total number of individuals on board the aircraft does not exceed the total number of operational flight crew oxygen system stations, the minimum quantity of oxygen aboard an aircraft before takeoff must be sufficient to accomplish the planned flight from the equal time point (ETP) to recovery should oxygen be required. Calculate using the 100 percent oxygen chart in the flight manual.

6.26.1.1. Crewmembers occupying or transiting the cargo compartment will have a portable oxygen walk-around bottle with quick-don mask/helmet, or Emergency Passenger Oxygen System (EPOS) readily available for use in the event of an emergency.

6.26.1.2. Crewmembers performing passenger monitoring duty will use a portable oxygen bottle with helmet or quick don attached.

6.26.1.3. On missions carrying passengers, if EPOS is not prepositioned throughout the cargo compartment, distribute EPOS to each passenger regardless of planned flight altitude.

6.26.2. Rafts. On overwater flights do not carry more passengers and crewmembers than life rafts will accommodate.

6.26.3. Life preserver units (LPUs). Crewmembers will fit and adjust LPUs for overwater flights. Ensure the appropriate number and type of life preservers are aboard for overwater missions carrying children and infants.

6.26.3.1. Over-water is defined as any flight exceeding 50 NM from the nearest shoreline or a power-off glide distance (15:1), whichever is less.

6.27. Fleet Service. Ensure the required fleet service items are aboard the aircraft early enough to permit inventory prior to engine start.

6.28. Cargo Documentation. Proper cargo or mail documentation will accompany each load.

6.28.1. Load Data Information (Applicable to AFRC/ANG completing 618 TACC-directed mission). At stations where there is no mobility air transportation function, the aircrew will collect the required load information on each leg, and submit it to the first station, which has such a function. The report will be submitted on AF Form 4075, **Aircraft Load Data Worksheet**.

6.29. Airlifting Hazardous Cargo.

6.29.1. AMCH 11-214, *AMC Aircrew Hazardous Material Handbook,* contains a description of the types and classes of hazardous cargo that may be carried. PICs are responsible for ensuring that all procedures contained in AMCH 11-214 are complied with when airlifting hazardous cargo.

6.29.1.1. For more information regarding hazardous materials, refer to AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipment.*

6.29.2. Flight Planning. Based on the Hazardous Cargo Briefing, the PIC will:

6.29.2.1. Enter "Hazardous Cargo" and the mission identifier or flight number in the appropriate section of the flight plan. Use *Remarks* section of DD175, **Military Flight Plan,** and *Other Information* section of DD1801, **International Flight Plan, DOD**. Refer to the FCG for country specific requirements concerning over-flight when transporting hazardous materials cargo.

6.29.2.1.1. IAW with the requirements in AMCH 11-214, annotate ―Hazardous Cargo" on flight plans when any amount of the following is transported:

6.29.2.1.1.1. Division 1.1 through 1.3 explosives.

6.29.2.1.1.2. Division 1.4 explosives which transit United Kingdom or Italy.

6.29.2.1.1.3. Toxic chemical ammunition (Compatibility Group K).

6.29.2.1.1.4. Highly toxic substances.

6.29.2.1.1.5. Division 6.2 infectious substances which require technical escorts and/or special protective equipment.

6.29.2.1.1.6. Nuclear weapons.

6.29.2.1.1.7. Class 7 Radioactive Material (Yellow III label).

6.29.2.1.1.8. All other hazardous materials, except Class 9 and ORM-D when aggregate gross weight exceeds 1,000 pounds (454 kg).

6.29.2.2. If possible, plan the flight to minimize overflying heavily populated or otherwise critical areas. Approach, landing, and takeoff tracks are excluded.

6.29.2.3. Prepare a departure message at stations when a C2 center is not available. The remarks section of the departure message will include: Class of hazardous material, DoD class or division for explosives, net explosive weight (NEW), and gross weight. If required, request special handling (e.g., isolated parking, security, technical escort teams, etc.).

6.29.2.4. If estimated time en route (ETE) is less than 1 hour, or if other circumstances preclude timely message receipt at destination, notify the next destination of the ETA and information listed in paragraph **6.29.2.3**. If available, C2 will relay required information to next destination.

6.30. Handling of Classified Cargo, Registered Mail, Not Mission Capable Supply (NMCS), Very, Very Important Part (VVIP), Forward Supply System (FSS) Shipments, and Courier Material.

6.30.1. MICAP, VVIP, sensitive cargo, courier materials, and registered mail moving within the normal airlift system are receipted at the on and offload stations using the air cargo manifest. For unit moves operated in accordance with Defense Transportation Regulation (DTR), Part III, Mobility, classified or sensitive cargo movement is normally manifested utilizing the DD Form 2130-2, or similar automated product (such as CALM or AALPS), and will normally be accompanied by a unit courier. However, if classified/sensitive unit cargo is offered without an accompanying courier, the DD1907, **Signature and Tally Record,** must be used.

6.30.1.1. Defense Courier Service (DCS) couriers coordinating with the PIC are authorized to designate officer or enlisted, (E-5 and above) crewmembers on military aircraft as couriers to escort and safeguard courier material when other qualified personnel are not available. Qualified passengers, if carried, are designated before designating crewmembers. The following restrictions apply:

6.30.1.1.1. Primary crewmembers will not be designated couriers without the consent of the PIC.

6.30.1.1.2. Crewmembers on aircraft scheduled to make an extended en route stop at a location where DCS couriers cannot provide en route support will not be designated as couriers.

6.30.2. During stops at en route locations supported by DCS stations, DCS couriers are required to meet designated couriers, guard and protect the material.

6.30.2.1. During unscheduled en route stops crewmembers may place courier material in temporary custody of the following agencies in descending order of priority.

6.30.2.1.1. DCS courier.

6.30.2.1.2. TOP SECRET control officer of the US armed forces.

6.30.2.1.3. US Department of State Diplomatic Courier.

6.30.2.1.4. US Department of State activity.

6.30.2.1.5. US military guards.

6.30.2.1.6. US DOD civilian guards.

6.30.3. If unable to follow the itinerary to the destination of the courier material, or material is lost, stolen or otherwise compromised, report circumstances to the nearest Defense Courier Station and notify the local US military commander or US Government activity.

6.30.4. Life or death urgency shipments consist of biological or other medical supplies of such urgency that human life is dependent upon immediate receipt. Shipments will be manifested separately and the manifest annotated with the words LIFE OR DEATH URGENCY. All shipments will be handled on a hand-to-hand receipt basis, using either the air cargo manifest or the DD1907, **Signature and Tally Record**, for unit moves. The PIC, or designated representative, will be briefed on the urgency of the shipment and be made the custodian during flight.

6.30.5. **Static Cling Sunvisors.** Do not use sunvisors with window heat on high. Sunvisors will be removed prior to installing thermal curtains.

6.30.5.1. Sunvisors will not be used on the Pilot #1 or Copilot #1 window during takeoffs/landings and receiver air refueling.

6.30.5.2. Sunvisors will not be used on the boom operator sighting window during air refueling operations.

6.30.5.3. Sunvisors are approved for daylight use only and shall be removed after every flight.

Section 6D—Departure

6.31. On Time Takeoffs. Mission departures are on time if the aircraft is airborne within -20/+14 minutes of scheduled takeoff time or as specified in MAJCOM supplement.

6.31.1. AR Missions. Scheduled takeoff time may be adjusted to meet ARCT. PICs shall notify C2 agency before takeoff to adjust the scheduled takeoff time.

6.31.2. Early Departures. Early departures are authorized to prevent a delay due to weather, ATC restrictions, airfield or aircraft operational limitations, to adjust mission flow during a large-scale operation, or if approved through C2 channels provided the impact on local and downrange facilities and crew duty is evaluated.

6.32. Not Used.

Section 6E—Enroute

6.33. Flight Progress. In-flight, use all available navigational aids to monitor INU/FMS performance and flight progress. Immediately report malfunctions or any loss of navigation capability that degrades centerline accuracy to the controlling air route traffic control center (ARTCC). See **Chapter 11** for detailed navigation procedures.

6.33.1. Any input into the active flight plan or change to a navigation steering solution will be verified by both pilots. Check both the coordinate information and the distances between waypoints against the flight plan or FLIP products to the maximum extent possible to avoid navigation errors.

6.34. Navigational Aid Capability. See **Chapter 11**.

6.35. CIRVIS and Other Reports. Report all vital intelligence sightings from aircraft as indicated in FLIP planning or FLIP En route Supplement.

6.35.1. In-flight harassment or hostile action against aircraft. Aircraft subjected to harassment or hostile action by foreign aircraft will immediately contact the nearest USAF air and ground voice facility and report the encounter. Include aircraft nationality, type, insignia, or any other identifying features; note position, heading, time, speed when harassed, and the type of harassment. Request relay of the report to the nearest C2 agency. Also, attempt to contact the nearest command post when in UHF or VHF range.

6.35.2. Other incidents will be reported as indicated in JCS Pub 6V5 and AFMAN10-206, *Operational Reporting.*

6.36. In-Flight Meals. Pilots should not eat meals at the same time, and their meals should consist of different menu items.

6.37. Communications.

6.37.1. Crews will conduct an HF radio ground check before takeoff if use of the HF radio will be required for ATC or C2 communications. If unable to verify that HF is operational on the ground, attempt to establish HF contact before going out of UHF/VHF range. If unable to establish HF contact with the controlling HF station, and an alternate means of relay of ATC information is not available, the aircraft should return to the nearest suitable support base. In the case of airborne HF failure, crews are authorized to continue under the following conditions:

6.37.1.1. If SATCOM-equipped.

6.37.1.1.1. Use Satellite Voice Communications to contact responsible station via special telephone numbers/short codes published in State AIPs (Aeronautical Information Publication).

6.37.1.2. If not SATCOM-equipped.

6.37.1.2.1. Attempt to contact ATC facility on VHF frequency.

6.37.1.2.2. Attempt VHF relay via another aircraft on 123.45 MHz.

6.37.2. Pilots shall provide ARTCC position and weather observations when required. If unable to contact an ATC agency, attempt to relay through the GLOBAL HF stations.

6.38. In-flight Emergency Procedures. The PIC will report deviations from directives that may occur as a result of an emergency according to AFI 11-202V3. Time and conditions permitting, inform passengers of the situation and intentions.

6.38.1. Notification of C2 Agencies. When practical after completing the aircraft emergency action checklists and associated actions, the PIC will furnish ATC and appropriate C2 agencies with a description of the difficulty, assistance required, intentions, and any other pertinent information.

6.38.2. The PIC may initiate a CONFERENCE HOTEL/SKYHOOK when additional expertise is necessary. Communications procedures are as follows:

6.38.2.1. Local Area. Use appropriate UHF or VHF frequencies.

6.38.2.2. En route. Attempt to establish a phone patch with the nearest or controlling C2 Center using global HF network, UHF/VHF stations, SATCOM, etc. If unable, aircrews are permitted to use ARINC radio service as an additional avenue for phone patch connectivity.

6.38.2.3. Provide the following information when time permits:

6.38.2.3.1. Description of the situation to include actions taken and intentions.

6.38.2.3.2. What assistance is being requested.

6.38.2.3.3. Fuel on board and hours of endurance.

6.38.2.3.4. Position.

6.38.2.3.5. Altitude and flight conditions.

6.38.2.3.6. Number of personnel and DVs on board.

6.38.2.3.7. Qualification of PIC.

6.38.2.3.8. Planned landing destination and ETA.

6.38.3. BOEING C/KC-135 In-flight Emergency Support. Boeing provides 24-hour support for C/KC-135 in-flight emergencies. To use this service: obtain a phone patch to one of the numbers listed below, tell the operator you have an ―INFLIGHT EMERGENCY" and identify the base or location in which the phone patching is established. **These numbers are only to be used for in-flight emergency support: DSN 743-5687, Commercial: 800-721-0422 or 206-655-9200.**

6.39. Need for Medical Assistance. When a person aboard the aircraft requires medical care, the PIC will notify the station of intended landing in sufficient time so the aircraft may be met by medical personnel. Notification will include the patient‘s sex, approximate age, and major complaint.

6.40. Weather Forecasts. It is the pilot‘s responsibility to obtain destination weather prior to descent. The primary sources are ATIS, 618 TACC weather operations, OWSs, and USAF base weather flights via pilot-to-meteorologist service (PMSV) or through a US Air Force aeronautical station. For aircraft flying in EUCOM AOR (ENAME operations) contact 21 OWS at Sembach AB GE. SOUTHCOM AOR contact AFSOUTH Weather Flight at Davis-Monthan AFB, AZ. The ATC system can provide weather information to en route aircraft.

Section 6F—Arrival

6.41. Descent. Before descent into unfamiliar areas, pilots will review appropriate terrain charts to increase aircrew situational awareness of obstructions. Primary crewmembers will not be involved in duties other than aircraft operations, descent and approach monitoring, and required checklist items from the initial descent point to landing.

6.41.1. Night and Marginal Weather Operations. Fly a precision approach, if available, at night or during marginal weather. If a precision approach is not available, fly any available approved instrument approach. A visual approach may be flown during night VFR conditions if an approved instrument approach is not available or operational missions require a tactical approach. ***NOTE:*** A visual glide slope indicator, VASI, PAPI, etc., is required.

6.41.1.1. On training/evaluation flights at familiar fields or recovery at home station, pilots may fly non-precision approaches or VFR traffic patterns to accomplish required training and evaluations. The pilot not flying will monitor a precision approach when practical to enhance safety.

6.42. Instrument Approach Procedures.

6.42.1. Aircraft category. The KC-135 is a category "D" aircraft. If approach speeds exceed 166 knots, the minimums for category "E" will be used.

6.42.2. Prior to starting an instrument approach, pilots will confirm their aircraft can comply with the missed approach climb gradient requirements established in AFI 11-202V3.

6.42.3. Weather minimums. Before starting an instrument approach, or beginning an en route descent, pilots will confirm the existing weather is reported to be:

6.42.3.1. At or above required visibility for straight-in or side step approaches.

6.42.3.1.1. For PAR approaches, visibility will be no lower than RVR 2400 (730 meters) or 1/2 mile visibility (800 meters) with no RVR readout available.

6.42.3.2. At or above required ceiling and visibility for circling approaches.

6.42.3.2.1. For circling approaches with no published ceiling requirement, the required ceiling shall be computed by taking the published HAA plus 100 feet rounded up to the next one hundred foot value. (For example, if the HAA is 747 feet, add 100 feet to get 847 feet and then round up to the next one hundred foot value which would be 900 feet. Your ceiling for the approach must be at or above 900 feet.) When circling minimums are published, but not by category, circling approach minimums will be as published, but in no case lower than 600 feet and 2 miles visibility.

6.42.3.3. Increase the published visibility minimums of an instrument approach by 1/2 SM or as noted in NOTAMs, on ATIS, or on the approach plate, when the runway approach lighting system (ALS) is inoperative. (This applies only to the ALS itself, not to VASIs, PAPIs, and other lights that are not a component of the ALS.)

6.42.3.4. If the ceiling is below the value depicted for published DoD or NACO precision approach, but visibility is at or above authorized minimums, comply with fuel requirements before initiating en route descent, penetration, or approach.

6.42.3.5. Variable visibility/ceiling reports. Many airfields are implementing automated weather reporting capabilities which may report variable visibilities and ceilings. When variable visibilities/ceilings are reported, pilots may use the greatest value reported. If it is subsequently determined that weather is actually below minimums for the approach, comply with **6.42.5**. Do not attempt further approaches until the lowest visibility/ceiling reported is at/above approach minimums.

6.42.4. Category I ILS and PAR Procedures. Decision height for precision approaches will be as published, but no lower than 200 feet height above touchdown (HAT).

6.42.4.1. ILS Precision Runway Monitor (PRM) Approaches. Both pilots must be certified to conduct an ILS PRM approach. Refer to AFI 11-2KC135V1 for certification procedures. Comply with the following operational procedures:

6.42.4.1.1. Two operational VHF communication radios are required.

6.42.4.1.2. The approach must be briefed as an ILS/PRM approach.

6.42.4.1.3. If unable to accept an ILS PRM approach clearance, contact the FAA ATCSCC at 1-800-333-4286 prior to departure time to obtain a pre-coordinated arrival time. Pilots who arrive at a PRM airport unable to accept PRM approach clearance, who did not contact ATC prior to departure, should expect an ATC directed divert to a non-PRM airport.

6.42.4.1.4. All breakouts from the approach shall be hand flown. Autopilots shall be disengaged when a breakout is directed.

6.42.4.1.5. Should a TCAS Resolution Advisory (RA) be received, the pilot shall immediately respond to the RA. If following an RA requires deviating from an ATC

clearance, the pilot shall advise ATC as soon as practical. While following an RA, comply with the turn portion of the ATC breakout instruction unless the pilot determines safety to be a factor.

6.42.5. Established on a Segment of the Approach. When under radar vectors to final approach, when cleared for the approach or when established on a segment of the approach and the weather is reported or observed to be below approach minimums, the PF has the option of continuing the approach to the missed approach point (MAP)/DH. If the approach is abandoned, level off (or descend if a lower altitude is required for the missed approach procedure). Comply with the last assigned clearance until a new or amended clearance is received.

6.42.5.1. Do not continue the approach below minimums unless the runway environment is in sight and the aircraft is in a position to make a safe landing.

6.42.5.2. If the approach is continued, the PIC must have sufficient fuel available to complete the approach and missed approach, and proceed to a suitable alternate with normal fuel reserve.

6.42.5.3. The PIC has final responsibility for determining when the destination is below designated minimums, and for initiating proper clearance request.

6.42.6. Holding. An aircraft may hold at a destination that is below landing minimums, but forecast to improve to or above minimums provided:

6.42.6.1. The aircraft has more fuel remaining than that required to fly to the alternate and hold for the appropriate holding time, and the weather at the alternate is forecast to remain at or above alternate filing minimums for the period, including the holding time.

6.43. Classified Equipment and Material. Comply with the following or as directed in MAJCOM supplement.

6.43.1. Equipment. When classified equipment is onboard, ensure the C2 Center or base operations office is aware of the requirement for aircraft security according to **Chapter 7** of this AFI. At bases not under jurisdiction of the Air Force, ensure the aircraft and equipment are protected. AFI 31-401, *Information Security Program Management*, provides specific guidance concerning the security of various levels of classified equipment aboard aircraft. For classified aircraft components which cannot be removed and stored, seal the aircraft. RAVENS will provide security at all AMC RAVEN required locations; otherwise, use guards employed by the host country for flight line/airport area control. Do not leave unguarded classified information stored in navigation or radio equipment.

6.43.2. Material. Ensure COMSEC and other classified materials are turned in at destination and receipts are obtained for COMSEC and classified material. The on-site C2 center will provide temporary storage for COMSEC and other classified materials during en route, turnaround, and crew rest stops. Encrypted COMSEC will only be transferred to authorized DoD personnel. If no U.S. facilities are available, crews will store COMSEC in the installed aircraft gun box/locker. Place a seal on the gun box/locker and secure it with a GSA-approved lock. Lock and seal the aircraft.

6.43.3. Aircrews will ensure that they have an operable Mode 4 when required for mission accomplishment. Aircrews will conduct an operational ground test of the Mode 4 (ground

test assets permitting) before deployment overseas, or as specified in the OPORD or contingency/exercise tasking.

6.43.4. Attempt to fix an inoperable Mode 4 before takeoff. Do not delay takeoff nor cancel a mission for an inoperable Mode 4, except when the aircraft will transit an area where safe passage procedures are implemented.

6.43.5. Conduct an in-flight check of the Mode 4 on all missions departing the CONUS for overseas locations if a ground check (**6.43.4**) was not accomplished. Aircrews can request the Mode 4 interrogation check through NORAD on UHF frequency 364.2. See **Table 6.3** for Sector Operations Centers (SOCCS) that conduct interrogation checks.

Table 6.4.

CONUS SECTOR	LOCATION	CALL SIGN
Northeast	Griffis Airport	Huntress
Southeast	Tyndall AFB	Oak Grove
Southwest	March ARB	Sierra Pete
Northwest	McChord AFB	Big Foot

6.43.6. Aircraft with inoperable Mode 4 will continue to their intended destinations. Repairs will be accomplished at the first destination where equipment, parts, and maintenance technicians are available. In theaters where safe passage is implemented, aircraft will follow procedures for inoperable Mode 4 as directed in the applicable airspace control order or Air Tasking Order (ATO).

6.43.7. Ground and in-flight checks of the Mode 4, when conducted, are mandatory maintenance debrief items. Crews will annotate successful and unsuccessful interrogation of the Mode 4 on all aircraft forms (AFTO Form 781A).

6.43.8. Aircrews will carry COMSEC equipment and documents required to operate the Mode 4 on missions when required for mission accomplishment. Before departing for any destination without COMSEC storage facilities, crews will contact their local COMSEC managers for guidance.

6.44. Unscheduled Landings. When an unscheduled landing or crew rest occurs at a base without a passenger facility, the PIC should immediately advise the appropriate C2 agency and request assistance in arranging substitute airlift for passengers on board. The following procedures apply when obtaining support for service members, in a group travel status, who are transported on AMC KC-135 aircraft flying a Transportation Working Capital Fund (TWCF) mission, which incurs an unscheduled delay due to weather, aircraft maintenance, or foreign diplomatic clearance problems, forcing the members to be lodged at that location until the aircraft can continue its mission.

6.44.1. If the delay is at a location where DoD facilities and AMC TWCF funds are available, payment for lodging (contract or on-base) and other required support is charged to local TWCF funds via the US Bankcorp Government Purchase Card (GPC) account, in

accordance with locally established procedures. TWCF payment is applicable for only those service members in a group travel status aboard any KC-135 aircraft delayed at these locations, regardless of the command owning the aircraft, provided the aircraft is flying a TWCF mission (SAAM, CJCS Exercise, JA/ATT, or Contingency) with an AMC mission identifier.

6.44.2. If the aircraft delay is at a location where TWCF funds are not available (regardless if DoD facilities are available or not), the KC-135 aircraft commander will utilize SF 44, Purchase Order-Invoice-Vouchering (or AF Form 15, United States Air Force Invoice) authority to acquire the necessary meals, quarters, and transportation for only the group travel status passengers. Upon return to home station, the aircraft commander will turn in the SF 44 or AF Form 15 to the local accounting liaison/budget office. Supporting documentation should include a copy of the service members" group travel orders along with applicable invoices/receipts for lodging, meals, and other required support. Upon validation of the SF 44 or AF Form 15, the accounting liaison/budget office forwards the bills for these charges to the DFAS Field Site for payment, citing the funds of the unit whose aircraft incurred the delay.

6.44.3. This policy does not apply to those passengers traveling on delayed KC-135 aircraft flying TWCF missions who are authorized per diem on their individual travel orders or in a space available status.

6.45. Maintenance. Complete the AFTO Form 781 after each flight. After landing, crewmembers will debrief maintenance personnel on the condition of the aircraft, engines, avionics equipment, and all installed special equipment as required. At stations without maintenance support, when a maintenance requirement exists the PIC will ensure a thorough debrief is provided to the C2 agency. On all AMC/ANG/AFRC missions, notify 618 TACC Logistics Control (618 TACC/XOCL).

6.46. Border Clearance. The border clearance responsibility will be as designated by the base or area command in accordance with AFI 24-401, AFI 24-402, AFI 24-403, *Border Clearance, Customs Program, and other United States Entry Requirements and Related Areas*.

6.46.1. Normal Operations.

6.46.1.1. The unit dispatching the mission is normally responsible for the border clearance of its aircraft.

6.46.1.2. When support is not available, border clearance is the responsibility of the PIC. Duties may be assigned to ground personnel or the BO, but the PIC retains ultimate responsibility. When a KC-135 aircraft is onloaded at a base without an air traffic function, the PIC is responsible for ensuring the following:

6.46.1.2.1. Crewmembers, troops, and passengers possess current passports and valid visas, when required.

6.46.1.2.2. Crewmembers, troops, and passengers have current certificates of immunization (shot record).

6.46.1.2.3. Cargo entry documents are in proper order.

6.46.1.2.4. Departing or entering the United States through a location where border clearance can be obtained.

6.46.1.2.5. Obtaining border clearance for aircraft cargo, passengers, crew and baggage, if required, before takeoff to a foreign area or after arrival from a foreign area.

6.46.1.2.6. Spraying the aircraft (see the FCG and Paragraph **6.47**).

6.46.2. Procedures for US Entry.

6.46.2.1. En route, the BO will distribute personal customs declarations (when not accomplished by passenger services) to all passengers, troops, and crewmembers. The BO will also brief passengers and crewmembers on customs regulations, and prepare and compile necessary border clearance forms for the PIC's signature.

6.46.2.2. En route, notify the C2 agency at the base of intended landing of any change in ETA to ensure border clearance is accomplished as soon as possible after landing.

6.46.2.3. Obtain a permit to proceed when military necessities require that an aircraft, which has landed in the United States for customs clearance, proceed to another base in the US to obtain border clearance. The permit to proceed delays customs inspection of cargo, passengers, and crew until arrival at the offload station, and saves intermediate offloading and reloading normally required for customs inspection. The permit to proceed is valid only to the airport of next landing where the border clearance must be completed or a new permit to proceed is issued by a customs official. Do not make intermediate stops between the issue point of the permit to proceed and destination of manifested cargo unless required by an emergency or directed by the controlling C2 center.

6.46.2.4. When an aircraft lands for a US border clearance, a US Customs representative normally will meet the aircraft to obtain the required documents. Do not deplane passengers, troops, or crewmembers unless necessary for safety or the preservation of life and property (crew chief excepted). Do not unload until approved by customs and agriculture personnel or their designated representatives. This procedure applies to the initial landing in the US and all landings required when operating on a permit to proceed or until all crew, passengers, and cargo complete final border clearance.

6.46.3. Inspections of U.S. Aircraft by Foreign Officials.

6.46.3.1. Follow USAF policy on status of military aircraft as stated in the FCG, *General Information* (**Chapter 3**). In substance, this policy holds that US military aircraft are immune from searches, seizures, and inspections (including customs and safety inspections) by foreign officials. In addition, PICs must be aware of, and adhere to, any specific FCG provisions for individual countries.

6.46.3.2. If confronted with a search request by foreign authorities, aircrews should use the following procedures.

6.46.3.2.1. In most cases, search attempts may be halted simply by a statement of the PIC to the foreign official that the aircraft is a sovereign instrumentality not subject to search without consent of USAF headquarters or the US Department of State officials in the country concerned. This should be clearly conveyed in a polite manner so as not to offend foreign authorities that may honestly, but mistakenly, believe they have authority to search USAF aircraft.

6.46.3.2.2. If foreign authorities insist on conducting a search, the PIC should make every effort to delay the search until he or she can contact USAF headquarters (through MAJCOM C2) or the appropriate embassy officials. The PIC should then notify these agencies of foreign request by the most expeditious means available and follow their instructions.

6.46.3.2.3. If foreign officials refuse to desist in their search request, pending notification to USAF headquarters or the appropriate embassy, the PIC should indicate that he or she would prefer to fly the aircraft elsewhere (provided fuel, flying time, and mechanical considerations permit a safe flight) and request permission to do so.

6.46.3.2.4. If permission is refused and the foreign authorities insist on forcing their way on board an aircraft, the PIC should state that he protests the course of action being pursued and that he intends to notify both USAF headquarters and the appropriate American embassy of the foreign action. The PIC should not attempt physical resistance, and should thereafter report the incident to USAF headquarters and appropriate embassy as soon as possible. The PIC should escort foreign authorities if the inspection cannot be avoided.

6.46.3.3. Other procedures may apply when carrying sensitive cargo or equipment. Follow these procedures and applicable portions of classified FCG supplements.

6.46.4. Exercises and Contingency Operations.

6.46.4.1. General. Certain airlift missions, which do not transit normal ports of entry or exit, require special procedures to expedite compliance with customs, public health, immunization, and agricultural requirements. A joint memorandum of understanding, between these agencies and MAJCOM establishes certain procedures and waivers.

6.46.4.2. Implementation. Implementation of the agreement is not automatic. Traffic and border clearing agencies implement all or part of the agreement as necessary for each operation. Inspection and clearance may be accomplished at the US onload or offload base, or at the foreign onload or offload base.

6.46.4.3. Customs Procedures.

6.46.4.3.1. Outbound: No requirement. Filing of Customs Form 7507, **General Declaration (Outward/Inward** *)*, is not required unless directed.

6.46.4.3.2. Inbound. Prepare one copy of the following documents before arrival:

6.46.4.3.2.1. Customs Form 7507 (Passenger list not required).

6.46.4.3.2.2. Cargo manifest.

6.46.4.3.2.3. For troops out of country less than 140 days:

6.46.4.3.2.3.1. Troop commander‘s certificate for examination of troop baggage.

6.46.4.3.2.3.2. One copy of the US Customs Baggage Declaration Form for each passenger not under command of the troop commander, to include observers, support personnel, civilians, news reporters, and crewmembers.

6.46.4.3.2.3.3. Upon arrival at a CONUS offload base, a customs representative will meet the aircraft and accept the troop commander‘s certificate with respect to troop baggage. Individual baggage declarations are not required. The troop commander should have inspected troop baggage.

6.46.4.3.2.3.4. Troops will debark under the observation of the customs representative with only a spot check of articles and baggage. The customs officer may elect to make a more extensive inspection.

6.46.4.3.2.4. For troops who are out of the country 140 days or more:

6.46.4.3.2.4.1. One copy of the U.S. Customs Baggage Declaration Form for each passenger. This includes observers, support personnel, civilians, news media personnel, and crewmembers. Personnel may use DD 1854, **Customs Accompanied Baggage, U.S.,** or Customs Form 6059B.

6.46.4.3.2.4.2. Upon arrival at a CONUS offload base, a customs representative will meet the aircraft and collect all declarations. Troops will debark under the observation of the customs representative who may make discretionary examination of the baggage.

6.46.4.4. Public Health Procedures.

6.46.4.4.1. When operating from a base without a traffic officer, the AC will ensure all crewmembers and passengers are properly immunized.

6.46.4.4.2. Spray the aircraft if required.

6.46.4.5. Immigration Procedures.

6.46.4.5.1. Outbound: No requirements.

6.46.4.5.2. Inbound: Submit the following to the immigration inspector if carrying civilian passengers.

6.46.4.5.2.1. One copy of Customs Form 7507.

6.46.4.5.2.2. One copy of Immigration Form I-92, **Aircraft/Vessel Report**.

6.46.4.5.2.3. One copy/set of Immigration Form I-94, **Arrival/Departure Record**, for each foreign national.

6.46.4.6. Agriculture Procedures:

6.46.4.6.1. Outbound: No requirement.

6.46.4.6.2. Inbound:

6.46.4.6.2.1. The command being airlifted will instruct troops that no fresh fruit, milk, milk products, vegetables, plants, plant pests, soil samples, animals, meat, and animal products can be brought into the United States. All items of troop personal gear are to be cleaned of mud before being brought aboard the aircraft. Personal gear and equipment must be examined for snails and other plant pests to prevent their accidental entry into the U.S.

6.46.4.6.2.2. Before loading, the command responsible for cargo being airlifted will clear vehicles and cargo of snails or other plant pests and of all mud and soil.

6.46.4.6.2.3. When required by agricultural quarantine regulations, the FCG, or higher headquarters, the aircraft will receive an aerosol treatment 30 minutes before landing.

6.46.4.6.2.4. On arrival, agricultural inspectors will inspect the aircraft after troops have disembarked. Crewmembers will assemble remains of in-flight lunches for prompt removal by fleet service personnel.

6.46.4.6.2.5. Inspectors examine baggage, equipment, vehicles, and cargo as offloaded. Any items, vehicles, or cargo found to be contaminated will be held for such treatment as the inspector may direct (washing, steam cleaning, physical cleaning, or fumigation).

6.46.5. Military Customs Pre-clearance Inspection Program. All crewmembers will ensure compliance with Military Customs Pre-clearance requirements.

6.47. Insect and Pest Control.

6.47.1. Responsibility. PICs will ensure required spraying is accomplished according to AFJI 48-104, *Medical and Agricultural Foreign and Domestic Quarantine Regulations for Vessels, Aircraft, and Other Transports of the Armed Forces (Joint)*, Department of Defense FCG, or as directed by higher headquarters. Certify the spraying on Customs Form 7507, or on forms provided by the country transited. Aircraft should never be sprayed with passengers on board. The only exception is when mandated by the FCG.

6.47.1.1. When spraying is required, use insecticide, aerosol d-phenothrin-2 percent, National Stock Number (NSN) 6840-01-067-6674 (or equivalent), to spray the aircraft. Wear leather or Nomex gloves while spraying.

6.47.1.1.1. Direct the nozzle toward the ceiling of the compartment or space being sprayed.

6.47.1.1.2. Spray spaces inaccessible from within the aircraft after completely loading fuel, baggage, cargo, and passengers, including baggage compartments, wheel wells, and other similar spaces.

6.47.1.1.3. Spray the cabin, cockpit, and other spaces accessible from within the aircraft after the crew is aboard and after closing all doors, windows, hatches, and ventilation openings.

CAUTION:
If the insecticide label directs disembarkation after use, spray before boarding crew or passengers. Close all doors and hatches for 10 minutes after dispensing and ventilate for 15 minutes before allowing anyone on board.

6.47.1.2. Spray for 3 minutes and 25 seconds unless longer periods are specified for the country being transited (see FCG).

NOTE:
Keep used aerosol cans separate from other trash so they may be disposed of safely.

6.47.2. Responsibility of PIC In-flight. When seeing any insect or rodent infestation of the aircraft in-flight, notify the destination C2 center, base operations, or airport manager of the situation before landing so the proper authorities can meet the aircraft.

6.47.3. Procedure at Aerial Port of Disembarkation (APOD). On arrival at an APOD, do not open cargo doors or hatches except to enplane officials required to inspect the aircraft for insect or rodent infestation. Do not onload or offload cargo or passengers until the inspection is satisfactorily completed. This procedure may be altered to satisfy mission or local requirements, as arranged by the base air terminal manager or the local C2 organization.

Section 6G—Miscellaneous

6.48. Dropped Objects. If an externally dropped object is discovered, the flight crew will:

6.48.1. Notify 618 TACC or the controlling agency as soon as practical; include details of routing, altitude, weather, etc.

6.48.2. Notify maintenance at the first military station transited.

6.49. Flight Data Recorder/Cockpit Voice Recorder (FDR/CVR). Pulling the FDR/CVR Circuit Breaker disables three pieces of equipment: Cockpit Voice Recorder, Flight Data Recorder, and TEMS Monitoring System. If involved in a mishap or incident, after landing and terminating the emergency, pull the FDR/CVR power circuit breaker. This procedure keeps the CVR from recording over itself, but retains the FDR/TEMS Data. If AOR SPINS direct clearing the CVR information, crews will utilize the ―Erase" function during engine shutdown vice pulling the circuit breaker.

6.50. Life Support and Dash 21 Equipment Documentation. The PIC or designated representative will:

6.50.1. Before departing home station or en route stations, ensure appropriate serviceable protective clothing, life support, survival, and dash 21 equipment for the entire or remainder of the mission are aboard the aircraft.

6.50.2. Before departing home station and following en route crew changes, review AF Form 4076, **Aircraft Dash 21 Equipment Inventory**, to ensure all required dash 21 equipment has been certified as installed by maintenance, the initial check has been signed by maintenance, and configuration documents match mission requirements.

6.50.3. Before departing home station and following en route crew changes, review, sign, and date the AFTO Form 46, **Prepositioned Life Support Equipment**, to ensure all required protective clothing and life support and survival equipment have been certified as installed by aircrew life support and that configuration documents match mission requirements.

6.50.4. Missing Equipment. Aircrew members discovering equipment missing will accomplish the following:

6.50.4.1. Make an AFTO Form 781 entry for equipment found missing. Additionally, ensure equipment removed from the aircraft at an en route station is documented in the AFTO Form 781.

6.50.4.2. Annotate AF Form 4076 and AFTO Form 46 in the next vacant column indicating the quantity remaining for the item. Ensure the ICAO location designator is entered above the check number of that column. Leave AF Form 4076 and AFTO Form 46 on board the aircraft in the event of an en route crew change.

6.50.4.3. Advise the PIC and determine whether the missing equipment should be recovered or replaced before mission continuation.

6.50.4.4. Assist, as required, in preparing reports of survey for missing equipment.

6.50.4.5. When possible, advise HQ AMC/A3TL (or MAJCOM life support office) and appropriate C2 agency (or airport management) before mission continuation.

6.50.5. Additional Equipment. If more equipment is discovered during the preflight than is annotated on the AF Form 4076 or AFTO Form 46, annotate the total quantity in the next vacant column for the item. Ensure the ICAO location designator is entered above the check number of that column.

6.51. Passenger Restrictions

6.51.1. The total number of personnel aboard -135 aircraft must not, under any normal condition, exceed the number of serviceable seats, with seat belts installed and available life support equipment. Personnel will not be seated aft of the aft emergency escape hatch. The PIC is the final arbiter as to how many space-A passengers can be safely transported.

6.51.2. No-show passenger baggage or baggage of passengers removed from the flight will be downloaded prior to departure. See exception in Paragraph **13.4.2.8**.

6.51.3. Latrine Capacity vs. Personnel Loading. PICs will consider the limited capacity of latrine facilities when carrying passengers. Waiver authority to exceed maximum latrine capacity during deployment operations rests with the OG/CC. For all other missions, use **Table 6.4** to calculate the total latrine capacity (in gallons) required against the maximum number of personnel and the sortie duration. Add additional devices or download passengers as required to meet mission requirements. The loss of capacity from unusable devices (e.g. inoperative commode, missing urinal, etc.) must be considered before calculating personnel accommodations. Aircraft modified with the 36 gallon capacity latrine (TCTO 1C-135-1596) need not compute maximum personnel loading against **Table 6.4**. If TCTO 1C-135-1596 is installed the maximum capacity is 60 people for 12 hours.

6.51.3.1. Standard aircraft configuration with one latrine commode and two urinals provides approximately 16 gallons of total capacity. This may be reduced by up to 1.5 gallons depending on the total amount of chemically treated water (pre charge) placed in each device. Extra devices (urinals, commode cartridges) may be added to accommodate larger passenger loads/increased sortie durations provided they can be safely stored, swapped and/or used inflight. Calculate.5 gal. pre-charge for each added device. Plan configuration requirements prior to home station departure.

Table 6.5. Latrine Capacity vs. Personnel Loading Chart.

Number Of Personnel	Sortie Duration In Hours												
	6	7	8	9	10	11	12	13	14	15	16	17	18
20	5.7	6.4	7.1	7.8	8.5	9.2	9.9	10.6	11.3	12.0	12.7	13.4	14.1
21	5.9	6.6	7.4	8.1	8.9	9.6	10.3	11.1	11.8	12.5	13.3	14.0	14.7
22	6.1	6.9	7.7	8.4	9.2	10.0	10.7	11.5	12.3	13.1	13.8	14.6	15.4
23	6.3	7.1	7.9	8.7	9.6	10.4	11.2	12.0	12.8	13.6	14.4	15.2	16.0
24	6.5	7.4	8.2	9.1	9.9	10.7	11.6	12.4	13.3	14.1	14.9	15.8	16.6
25	6.8	7.6	8.5	9.4	10.3	11.1	12.0	12.9	13.8	14.6	15.5	16.4	17.3
26	7.0	7.9	8.8	9.7	10.6	11.5	12.4	13.3	14.2	15.2	16.1	17.0	17.9
27	7.2	8.1	9.1	10.0	11.0	11.9	12.8	13.8	14.7	15.7	16.6	17.6	18.5
28	7.4	8.4	9.3	10.3	11.3	12.3	13.3	14.2	15.2	16.2	17.2	18.2	19.1
29	7.6	8.6	9.6	10.6	11.7	12.7	13.7	14.7	15.7	16.7	17.7	18.8	19.8
30	7.8	8.9	9.9	11.0	12.0	13.1	14.1	15.2	16.2	17.3	18.3	19.4	20.4
31	8.0	9.1	10.2	11.3	12.4	13.4	14.5	15.6	16.7	17.8	18.9	19.9	21.0
32	8.2	9.3	10.5	11.6	12.7	13.8	14.9	16.1	17.2	18.3	19.4	20.5	21.7
33	8.4	9.6	10.7	11.9	13.1	14.2	15.4	16.5	17.7	18.8	20.0	21.1	22.3
34	8.6	9.8	11.0	12.2	13.4	14.6	15.8	17.0	18.2	19.4	20.5	21.7	22.9
35	8.9	10.1	11.3	12.5	13.8	15.0	16.2	17.4	18.7	19.9	21.1	22.3	23.6
36	9.1	10.3	11.6	12.8	14.1	15.4	16.6	17.9	19.1	20.4	21.7	22.9	24.2
37	9.3	10.6	11.9	13.2	14.5	15.7	17.0	18.3	19.6	20.9	22.2	23.5	24.8
38	9.5	10.8	12.1	13.5	14.8	16.1	17.5	18.8	20.1	21.5	22.8	24.1	25.4
39	9.7	11.1	12.4	13.8	15.2	16.5	17.9	19.2	20.6	22.0	23.3	24.7	26.1
40	9.9	11.3	12.7	14.1	15.5	16.9	18.3	19.7	21.1	22.5	23.9	25.3	26.7
41	10.1	11.5	13.0	14.4	15.9	17.3	18.7	20.2	21.6	23.0	24.5	25.9	27.3
42	10.3	11.8	13.3	14.7	16.2	17.7	19.1	20.6	22.1	23.6	25.0	26.5	28.0
43	10.5	12.0	13.5	15.0	16.6	18.1	19.6	21.1	22.6	24.1	25.6	27.1	28.6
44	10.7	12.3	13.8	15.4	16.9	18.4	20.0	21.5	23.1	24.6	26.1	27.7	29.2
45	11.0	12.5	14.1	15.7	17.3	18.8	20.4	22.0	23.6	25.1	26.7	28.3	29.9
46	11.2	12.8	14.4	16.0	17.6	19.2	20.8	22.4	24.0	25.7	27.3	28.9	30.5
47	11.4	13.0	14.7	16.3	18.0	19.6	21.2	22.9	24.5	26.2	27.8	29.5	31.1
48	11.6	13.3	14.9	16.6	18.3	20.0	21.7	23.3	25.0	26.7	28.4	30.1	31.7
49	11.8	13.5	15.2	16.9	18.7	20.4	22.1	23.8	25.5	27.2	28.9	30.7	32.4
50	12.0	13.8	15.5	17.3	19.0	20.8	22.5	24.3	26.0	27.8	29.5	31.3	33.0
51	12.2	14.0	15.8	17.6	19.4	21.1	22.9	24.7	26.5	28.3	30.1	31.8	33.6
52	12.4	14.2	16.1	17.9	19.7	21.5	23.3	25.2	27.0	28.8	30.6	32.4	34.3
53	12.6	14.5	16.3	18.2	20.1	21.9	23.8	25.6	27.5	29.3	31.2	33.0	34.9
54	12.8	14.7	16.6	18.5	20.4	22.3	24.2	26.1	28.0	29.9	31.7	33.6	35.5
55	13.1	15.0	16.9	18.8	20.8	22.7	24.6	26.5	28.5	30.4	32.3	34.2	36.2
56	13.3	15.2	17.2	19.1	21.1	23.1	25.0	27.0	28.9	30.9	32.9	34.8	36.8
57	13.5	15.5	17.5	19.5	21.5	23.4	25.4	27.4	29.4	31.4	33.4	35.4	37.4
58	13.7	15.7	17.7	19.8	21.8	23.8	25.9	27.9	29.9	32.0	34.0	36.0	38.0
59	13.9	16.0	18.0	20.1	22.2	24.2	26.3	28.3	30.4	32.5	34.5	36.6	38.7
60	14.1	16.2	18.3	20.4	22.5	24.6	26.7	28.8	30.9	33.0	35.1	37.2	39.3

NOTES: Chart Go/No-Go coding based on standard acft config of 1 commode and 2 urinals

Go — Meets mission requirements

May exceed capacity. Consider adding additional devices

No/Go — Exceeds capacity. Add additional devices and recalculate (Notes 1, 2 and 3) or download pax

1. Device capacity: commode cartridge = 4 gal., urinal = 5 gal.
2. Pre-charge is approximately .5 gal per device
3. Caution (Yellow) area reflects max capacity reduction for chemical pre-charge
4. Missions less than 5 hours and/or less than 20 pax need not be calculated.

6.52. Airfield Data Reports. Aircrews transiting unfamiliar airfields or airfields where conditions may adversely affect subsequent flight will:

6.52.1. Report airfield characteristics that produce illusions, such as runway length, width, slope, and lighting, as compared to standard runways, sloping approach terrain, runway contrast against surrounding terrain, haze, glare, etc., and previously unknown obstacles, airfield markings, or other safety critical items to HQ AMC/A3AS.

6.52.2. Debrief the next C2 center transited.

6.53. Impoundment of Aircraft. If an aircraft is involved in a serious in-flight incident, the PIC should seek to impound the aircraft immediately after landing IAW AFI 21-101 and contact the controlling C2 agency for further instructions.

6.54. Not Used.

6.55. Wake Turbulence Avoidance. Comply with wake turbulence avoidance criteria. Acceptance of traffic information, instructions to follow an aircraft, or a visual approach

clearance is acknowledgment that the PIC will ensure takeoff and landing intervals and accepts responsibility of providing wake turbulence separation. Refer to FLIP General Planning (GP) for more information concerning wake turbulence separation.

6.56. Overflying En route Stops. The C2 agency may approve a request to overfly a scheduled en route stop (NGB/A3X for ANG-directed missions, AFRC command center for AFRC-directed missions).

6.57. Aircraft Systems Operation.

6.57.1. MFD. Pilot Flying (PF) must have the top MFD set with the full ADI for all takeoffs, final approaches and landings. Course guidance (other than stick map) appropriate for the current ATC clearance, will be displayed on a PF MFD. ***EXCEPTION* :** When malfunctions limit the pilot to a single operable MFD.

6.57.2. Autopilot. To the maximum extent possible, the aircraft will be flown with the autopilot coupled to the FMS (except for takeoffs, air refuelings, uncoupled approaches, and landings).

6.57.3. Weather Radar. Configure the weather radar based on mission requirements. Do not configure the weather radar to simultaneously operate in an excessive number of modes since this will significantly degrade normal radar performance in each individual mode.

6.57.4. GPS, mode 4, and secure voice/HAVE QUICK keys. Load as required.

6.58. Aircrew Complement. C/KC-135 aircraft will normally be operated using three-person procedures (minimum two pilots and one boom operator). Commanders may designate that a mission use four-person procedures (minimum two pilots, one navigator and one boom operator) if navigator currency/training requires (N/A ANG). When a mission is scheduled as four-person, a ―Navigator suite or B-Kit" must be installed at the navigator station.

6.58.1. OPLAN 8044 will be flown three-person.

6.58.2. SOAR will be flown four-person.

6.58.3. Basic Navigator. Navigator‘s duties include, but are not limited to, assist in mission planning/study, operating equipment at duty station, and functioning as backup to the pilot team for navigation, rendezvous and communication duties. Pilots will retain full responsibility for all navigation and rendezvous duties.

6.58.4. SOAR Navigator. Navigator‘s duties (on both SOAR and Non-SOAR missions) include mission planning/study, operating equipment at duty station, and functioning as crew lead for navigation, rendezvous and communications duties as directed by appropriate flight manuals and mission directives. Pilots provide backup for all navigator duties.

6.59. MPRS. For MPRS, periodically check Ram Air Turbine (RAT) speeds on appropriate Pod Control Panel(s) for overspeed condition(s).

Chapter 7

AIRCRAFT SECURITY

7.1. General. This chapter provides guidance on aircraft security and preventing and resisting aircraft piracy (hijacking) of the C/KC-135 aircraft. AFI 13-207, *Preventing and Resisting Aircraft Piracy (Hijacking)*, AFI 31-101, *The Air Force Installation Security Program*, and specific MAJCOM security publications contain additional guidance. Aircrews will not release information concerning hijacking attempts or identify armed aircrew members or missions to the public.

7.2. Security. The C/KC-135 is a ―Protection Level 3" resource. Aircraft security at non-United States military installations is the responsibility of the controlling agency.

7.3. Air Force Installation Security Program. The following security procedures will implement AFI 31-101, requirements for C/KC-135 aircraft:

7.3.1. The aircraft will be parked in an established restricted area and afforded protection IAW AFI 31-101.

7.3.2. When no permanent or established restricted area parking space is available, establish a temporary restricted area consisting of a raised rope barrier, and post with restricted area signs. Portable security lighting will be provided during the hours of darkness if sufficient permanent lighting is not available. Post security forces IAW AFI 31-101.

7.3.3. At non-United States military installations, the PIC determines the adequacy of local security capabilities to provide aircraft security commensurate with this chapter. If he or she determines security to be inadequate, the aircraft will depart to a station where adequate security is available.

7.3.4. The security force must be made aware of all visits to the aircraft. The security force POC must be identified to the PIC.

7.3.5. Security support is a continual requirement and is not negated by the presence of aircrew or ground crewmembers. Security force support terminates only after the aircraft doors are closed and the aircraft taxis.

7.4. Standby Aircraft Security. Ensure aircraft hatches and doors are secure to show unauthorized entry. The PIC shall notify the C2 agency the aircraft is sealed and provide them a means to access the aircraft in an emergency. Annotate the forms with the time the aircraft was sealed. The C2 Senior Controller may grant access to a sealed aircraft, shall document time of entry and ensure it remains launch capable. The PIC or designated representative must be present if access to the aircraft is required and will ensure the aircraft is resealed. The aircrew pre-preflight portion will remain valid if performed by one aircrew, sealed, and flown by another aircrew.

NOTE:
WG/CCs should develop local procedures for documentation and management IAW TO 00-20-1 and MAJCOM Supplement.

7.5. En route Security. The planning agency must coordinate with the execution agency to ensure adequate en route security is available. The PIC will receive a threat assessment and en

route security capability evaluation briefing for areas of intended operation prior to home station departure and should request updates from en route C2 as required. If required, a PHOENIX RAVEN team will be assigned to the mission.

7.5.1. The PHOENIX RAVEN team will consist of three US Air Force security force members, but may include more depending on security requirements. The team‘s travel status is determined by MAJCOM. The team travels in MEGP status and is responsible to the PIC at all times. In turn, the PIC is responsible for the team‘s welfare (transportation, lodging, etc.). Ensure security team members receive a mission briefing and aircraft egress/passenger briefing (as appropriate).

7.5.2. Arrival. On arrival, the PIC will assess the local situation and take the following actions as required:

7.5.2.1. Area patrol. Request area security patrols from local security forces. If local authorities request payment for this service, use AF Form 15.

7.5.2.2. Aircrew surveillance. During short ground times, direct armed crewmembers to remain with the aircraft and maintain surveillance of aircraft entrances and activities in the aircraft vicinity.

7.5.2.3. Inadequate Security. If, in the opinion of the PIC, airfield security is inadequate and the PIC determines the safety of the aircraft is in question, the PIC may waive the FDP limits and crew rest requirements and depart as soon as possible for a base considered reliable. Report movement and intentions to the controlling agency as soon as practical. If a departure is not possible, the aircrew must secure the aircraft to the best of their ability. In no case, will the entire crew leave the aircraft unattended. Crew rest requirements will be subordinate to aircraft security when the airframe may be at risk. The PIC should rotate a security detail among the crew to provide for both aircraft protection and crew rest until relief is available. Request security assistance from the nearest DoD installation, US Embassy, local military or law enforcement agencies as appropriate.

7.5.3. Entry Control Procedures. Unescorted entry is granted to aircrew members and support personnel assigned to the mission who possess their home station AF Form 1199, **Air Force Entry Control Card**, supported by an Entry Access List (EAL) or aircrew orders. Aircrew members and assigned crew chiefs are authorized escort authority.

7.5.3.1. Normally, non-United States nationals, such as cargo handlers, can perform their duties under escort and should not be placed on the EAL.

7.5.3.2. Personnel not on the EAL or aircrew orders must be escorted within the area.

7.6. Detecting Unauthorized Entry.

7.6.1. When parking on a secure ramp, the aircraft will normally be left unlocked/unsealed to allow ground personnel immediate access. If, in the PIC‘s judgment, the aircraft needs to be locked and sealed in order to detect unauthorized entry, then:

7.6.1.1. Use available aircraft ground security locking devices.

7.6.1.2. Secure the doors in a manner that will indicate unauthorized entry (e.g., tape inside of doors to airframe so that entry pulls tape loose).

7.6.1.3. Close and seal the crew entrance door (box car seal).

7.6.1.4. Wipe the immediate area around lock and latches clean to aid in investigation of a forced entry.

7.6.1.5. Report any unauthorized entry or tampering to the Office of Special Investigation (OSI), security forces or local authorities, and the C2 agency. Have aircraft thoroughly inspected prior to flight.

7.6.2. Security awareness is crucial to effective mission accomplishment. Aircrews must always remain vigilant to their surroundings, especially at high threat, low security locations. In addition to normal preflight activities, aircrews must inspect areas of the aircraft not covered by normal preflight duties, to include: aircraft wheel wells, keel beam bays and lower nose compartment for unauthorized packages, personnel, or other unfamiliar devices. Report any suspicious items to host security forces. Aircrews will maintain a heightened security posture throughout all pre-takeoff activities.

7.7. Preventing and Resisting Hijacking.

7.7.1. The Administrator, Federal Aviation Administration (FAA), has exclusive responsibility to direct law enforcement activity related to actual or attempted aircraft piracy (hijacking) in the United States. See CJCSI 3610.01A, dated 20 Jun 06, and 49 USC 46501 and 49 USC 44903(e).

7.7.2. In taking action during an aircraft hijacking situation, military forces will act under military command within the scope of their duties.

7.7.3. In the event an aircraft involved in an aircraft hijacking situation is carrying documents, equipment, or material that DoD has determined to be highly sensitive, or weapons of mass destruction, DoD will provide FAA, and where appropriate, the Federal Bureau of Investigation (FBI) with all pertinent information. Where possible, the FAA will consult and cooperate with DoD prior to directing any law enforcement activity.

7.7.4. An aircraft is most vulnerable to hijacking when the aircrew is aboard and the aircraft is operationally ready for flight.

7.7.5. A concerted effort must be made to prevent the hijacking of military or military contract aircraft by detecting potential hijackers before they board the aircraft.

7.7.6. Should preventive efforts fail, any actual attempt to hijack a military aircraft must be resisted in a manner appropriate to the situation.

7.7.7. Since air piracy may be committed by political terrorists or by individuals to whom the threat of death is not a deterrent but a stimulus, ordinary law enforcement procedures may be ineffective. Thus, successful conclusion of a hijacking situation and apprehension of the hijackers may require use of specialized law enforcement techniques and procedures.

7.7.8. Delaying actions have been most successful in overcoming hijackings without loss of life or property.

7.7.9. In the case of an aircraft carrying passengers, the primary concern is the safety of the passengers.

7.7.10. Assistance to hijacked civil or military contract aircraft will be rendered as requested by the pilot in command of the aircraft and the authority exercising operational control of the anti-hijacking effort.

7.8. Preventive Measures. Commanders at all levels must ensure preventive measures are taken to minimize access to the aircraft by potential hijackers. When a C/KC-135 is operating away from home station, the PIC will comply with this chapter and AFI 31-207, as supplemented.

7.8.1. Preventive measures include the following: The host station passenger processing or manifesting facility should conduct anti-hijacking inspections. Do not board passengers until the PIC is fully satisfied with inspection results. In the absence of qualified passenger service representatives, the PIC will ensure the anti-hijacking inspection of passengers and baggage is accomplished.

7.8.2. Medical facility commanders are responsible for anti-hijacking inspection of patients. When patients are delivered to the aircraft by civilian sources, the aircrew will perform required inspections prior to loading.

7.8.3. During exercises or contingencies in support of combat operations involving the movement of large groups of personnel, the unit being supported should manifest passengers and perform anti-hijacking inspections.

7.8.4. Passengers will not carry weapons or ammunition on their person or in hand-carried baggage aboard an aircraft. ***EXECPTION:*** Special agents, guards of the Secret Service or State Department, RAVEN Team Members, and other individuals specifically authorized to carry weapons.

7.8.4.1. Troops or deadhead crewmembers will not retain custody of ammunition on an aircraft. They will turn it in to the troop commander or PIC. Troops may carry unloaded weapons and ammunition aboard the aircraft during combat operations. When the tactical situation dictates (in coordination with the aircrew), weapons may be loaded at the order of the troop commander or team leader.

7.8.4.2. Dummy clips that can be easily identified may be loaded for training at the order of the team leader in coordination with the aircrew.

7.8.4.3. RAVENs will only be armed in-flight on specifically designated missions identified on the mission —rig" as —RAVEN in-flight arming required".

7.8.5. If weapons must be cleared, instruct the individual(s) to:

7.8.5.1. Move to a safe, clear area at least 50 feet from any aircraft, equipment, or personnel before un-holstering or un-slinging their weapons.

7.8.5.2. Clear weapons in accordance with standard safety procedures. Ensure troop/PIC retains ammunition IAW paragraph **7.8.4.1**.

7.9. Initial Response. When an act of air piracy involves an Air Force installation or aircraft within the United States, response will be according to the following guidelines until such time as FAA assumes active direction of anti-hijacking efforts. Resist all attempts to hijack a military aircraft. Resistance may vary from simple dissuasion, through deception and subterfuge, to direct physical confrontation, including the prudent use of weapons.

7.9.1. The following guidelines should be used to counter a hijacking, actual or threatened, while the aircraft is on the ground:

7.9.1.1. Delay movement of the aircraft to provide time for ground personnel and the aircrew to establish communication and execute coordinated resistance actions.

7.9.1.2. The authority for determining when ground resistance will be discontinued is vested in the highest available level of command. When adequate communication cannot be established, or when time does not permit, this authority is delegated in the following order:

7.9.1.2.1. MAJCOM commander exercising operational control of the aircraft.

7.9.1.2.2. MAJCOM commanders in whose AOR the airfield lies.

7.9.1.2.3. Senior operational commander on scene.

7.9.1.2.4. PIC in compliance with MAJCOM directives.

7.9.2. A hijacked aircraft carrying weapons of mass destruction will not be allowed to takeoff. Refer to DoD 5210.41M, *Nuclear Weapon Security Manual,* paragraph 9B(3), for additional guidance.

7.10. In-Flight Resistance. After airborne, success in thwarting a hijacking depends on the resourcefulness of the aircrew. Many variables of a hijacking preclude use of any specific counter-hijacking procedure. Some key factors should be evaluated before deciding a course of action to be taken, including the nature of the threat, danger to life or crippling damage to the aircraft in-flight, destination indicated by the hijacker, and the presence of sensitive material onboard. Some counter-hijacking actions the aircrew may consider are:

7.10.1. Engage the hijacker(s) in conversation in an attempt to calm them and to evaluate what course of action might be effective.

7.10.2. Dissuade the hijacker.

7.10.3. Use facts or subterfuge to convince the hijacker intermediate stops are necessary.

7.10.4. Propose more favorable alternatives, such as landing in a neutral, rather than a hostile, country.

7.10.5. Exploit any reasonable opportunity to incapacitate or overcome the hijacker physically, including the prudent use of firearms.

7.11. Communications Between Aircrew and Ground Agencies. Crews facing a hijacking threat will transmit and in-the-clear notification of hijacking to ATC. Notify ground agencies by any means available as soon as practical and follow-up with situation reports as circumstances permit. Covert signals are no longer to be used per FAA guidance.

7.12. Forced Penetration of Unfriendly Airspace. Refer to FIH for international signals for air intercept.

7.13. Arming of Crewmembers. When crews are directed to be armed by the mission execution authority, the PIC will determine which crewmembers will be armed (two crewmembers will be armed unless directed otherwise). All crewmembers should know who is armed. The following procedures apply when arming is directed:

7.13.1. Weapons Issue. Before departing home station, obtain weapons, ammunition, box, lock and key. Crewmembers will be armed according to AFI 31-207, *Arming and Use of Force by Air Force Personnel* and MAJCOM publications. If an armed crew member must leave the crew en route, transfer the weapon to another authorized crew member using AF Form 1297.

7.13.2. Wearing of Weapons. Wear weapons in a holster, concealed at all times to prevent identifying armed crewmembers. Do not wear weapons off the flight line except to and from the C2, armories, and other facilities associated with aircrew activities.

7.13.2.1. AMC Passenger Terminal Procedures. Armed crewmembers must discreetly identify themselves to AMC passenger service personnel upon arrival at security checkpoints. One crewmember will present a valid set of crew orders, their military identification card, and AF Form 523, **USAF Authorization to Bear Firearms**, authorizing the carrying of concealed weapons. Once terminal personnel verify this, they will allow the crewmember to vouch for the remaining crewmembers. The entire crew will then proceed through the magnetometer without removing objects from their pockets. This will prevent passengers from determining which crewmembers are armed.

7.13.3. Weapons Storage In-Flight. Crewmembers will be armed before beginning preflight, onload or offload duties and until completion of all post-flight duties. When no passengers are aboard that require arming, weapons may be stored in the gun box in-flight after a satisfactory stowaway check. Crewmembers will rearm before landing. Weapons need not be unloaded before placing them in a gun box.

7.13.4. Weapons Storage on the Ground.

7.13.4.1. Aircrews will store weapons and ammunition in the most secure facility available, normally the base armory.

7.13.4.2. In the event a secure facility is unavailable:

7.13.4.2.1. Non-stage aircrews may store weapons and ammunition in the aircraft gun box.

7.13.4.2.2. Stage aircrews should contact C2 for guidance.

7.13.5. When storing weapons in the gun box:

7.13.5.1. Weapons should normally not be unloaded.

7.13.5.2. Inform C2 which crew member has the gun box key.

7.13.6. Crewmembers will ensure they are reissued the same weapon until mission termination at home station.

7.13.7. Loading and Transfer of Weapons. Load and unload weapons at approved clearing barrels if available. Do not use a hand-to-hand transfer of loaded weapons to another crew member; place the weapon on a flat surface.

7.14. Force Protection. Crews must be alert to possibility of terrorist activities at all times. Reference AFMAN 10-100, *Airman's Manual,* Joint Service Guide 5260, *Service Member's Personal Protection Guide: Combat Terrorism While Overseas,* and AFI 10-245, *Air Force Antiterrorism,* for Force Protection measures.

Chapter 8

OPERATIONAL REPORTS AND FORMS

8.1. General. This chapter provides guidelines for worksheets, reports, and forms associated with AMC operational activities. Consult governing instruction or contact wing, unit, or local flight safety officers for assistance with safety forms.

8.2. AF Form 457, USAF Hazard Report. The AF Form 457 is a tool to notify supervisors and commanders of a hazardous condition that requires prompt corrective action. For hazardous weather, complete the front side of an AF Form 457 and send it to the parent wing flying safety office. If addressing a computer flight plan deficiency, attach a copy of the AF Form 72, **Air Report (AIREP).** Send your report so the parent unit receives it within 5 days of the event. For more information, see AFI 91-202, *The US Air Force Mishap Prevention Program.*

8.3. AF Form 651, Hazardous Air Traffic Report (HATR). The AF Form 651 is a tool to report near midair collisions and alleged hazardous air traffic conditions. See Attachment 3 of AFI 91-202 for more information concerning the HATR program.

8.3.1. AFI 91-204, *Safety Investigations and Reports*, and AFMAN 91-223, *Aviation Safety Investigations and Reports*, list HATR reportable incidents.

8.3.2. The PIC shall report the hazardous condition to the nearest ATC agency (e.g. center, Flight Service Station (FSS), control tower, or aeronautical radio station) as quickly as safety allows. Include the following information in the radio call (as appropriate)

8.3.2.1. Aircraft identification or call sign.

8.3.2.2. Time and place (radial/DME of NAVAID, position relative to the airfield, incident, etc).

8.3.2.3. Altitude or flight level.

8.3.2.4. Description of the other aircraft or vehicle.

8.3.2.5. Advise controlling ATC agency that the PIC will file a HATR upon landing.

8.3.3. Deadline to file a HATR is 24 hours after event via any communication mode available. If landing airport has a USAF airfield management function, submit completed AF Form 651 to the airfield management officer for forwarding to the wing safety office. If landing airport does not have an airfield management office, notify the safety office of the Air Force base nearest to location where the condition occurred, PIC‘s home base safety office, or as prescribed by overseas MAJCOM. In that case, provide contact sufficient information to prepare AF Form 651.

8.3.4. Grant individuals who submit a HATR immunity from disciplinary action provided:

8.3.4.1. If they were the offending party, their violation was not deliberate.

8.3.4.2. They committed no criminal offense.

8.3.4.3. Their actions did not result in a mishap.

8.3.4.4. They properly reported the incident using procedures above.

8.4. AMC FORM 97, AMC In-Flight Emergency and Unusual Occurrence Worksheet. The AMC Form 97 (or MAJCOM equivalent) is a tool to notify appropriate authorities of any mishap or unusual occurrence involving crewmembers or aircraft. PICs shall complete all appropriate areas of the form in as much detail as possible. When notified, AMC C2 agents will inform their supervisor/commander to start investigation and reporting activities IAW AFI 91-204, AFMAN 91-223, and Operation Report 3 (OPREP-3) procedures.

8.4.1. PICs will report crewmember or passenger injury, aircraft damage, or injury/damage to another organization‘s people or equipment caused by PIC‘s aircraft/crewmember. At a minimum, report the following:

8.4.1.1. Any physiological episode (physiological reaction, near accident, or hazard in-flight due to medical or physiological reasons).

NOTE:
In the event of a physiological episode, all crewmembers and passengers involved will report to a flight surgeon as soon as practical and the flight surgeon will coordinate with the safety office to generate a Class E Physiological Event in the Air Force Safety Automated System.

8.4.1.2. A human factors related situation, e.g. misinterpretation of instruments; information overload (i.e. tactile, aural, and visual input too fast to permit reasonable analysis/decision); aircrew task saturation (i.e. too many responses/actions required in a short period of time); or confused switch-ology (i.e. adjacent switches where actuation of wrong switch creates dangerous situation). Anonymous reports are acceptable.

8.4.1.3. A condition that required engine shutdown, in-flight flameout, engine failure, suspected engine power loss, or loss of thrust that required descent below MEA. Engine failures include, but are not limited to, shrapnel from a failed internal engine component penetrating the engine case, engine case rupture/burn-through, engine nacelle fire, substantial fuel leak, or unselected thrust reversal. Consistent with safety, immediately report incidents that involve multiple engines (may report single-engine incidents upon landing). ***NOTE:*** Exclude intentional shutdowns for training and/or FCF unless the engine fails to restart.

8.4.1.4. A flight control malfunction (including the autopilot and trim systems) that results in an unexpected or hazardous change of flight attitude, altitude, or heading. Enter the flag words, ―Reportable Flight Control Malfunction” in the AFTO Form 781A.

8.4.1.5. A landing gear malfunction aggravated by failed emergency system or procedures.

8.4.1.6. A cargo door, ramp or other door malfunction when intent for flight exists which could affect system integrity.

8.4.1.7. An in-flight loss of all pitot-static or gyro-stabilized attitude/directional instrument indications.

8.4.1.8. Any spillage/leakage of radioactive, toxic, corrosive, or flammable material from aircraft stores or cargo.

8.4.1.9. Conditions that required pilot to depart takeoff or landing surface.

8.4.1.10. All in-flight fires regardless of damage.

8.4.1.11. All bird strikes regardless of damage.

8.4.1.12. Incidents that, in the PIC‘s judgment, are in the interest of flight safety.

8.4.1.13. All cases of acoustical tile panel damage due to in-flight ice shedding.

8.4.2. Always provide your home station safety officer a copy of relevant information. Make every effort to preserve all mission and flight related documents, such as flight plans, weather briefings, NOTAMS, Weight and Balance form, etc., for collection by appropriate safety officials. PICs shall use the following precedence to report mishaps (as soon as feasible after event):

8.4.2.1. MAJCOM flight safety officer (FSO).

8.4.2.2. Any FSO.

8.4.2.3. The nearest USAF C2 center.

8.4.2.4. Any USAF Airfield Management Operations.

8.5. Report Violations, Unusual Events, or Circumstances. PICs shall document events that require them to deviate from AFI 11-202V3 (unless waived by competent authority) or alleged navigation errors (include over-water position errors exceeding 24NMs, border, or ATC violations).

8.5.1. Describe deviation(s) using the following report format:

8.5.1.1. Facts. Report pertinent details of the event.

8.5.1.2. Investigation and analysis. Report circumstances which required/led to deviation(s).

8.5.1.3. Findings and conclusions.

8.5.1.4. Recommendations to prevent recurrence.

8.5.1.5. Corrective actions taken.

8.5.2. Include the following attachments with the report:

8.5.2.1. Formal notification of incident.

8.5.2.2. AMC Form 41 or approved crew orders.

8.5.2.3. Crewmembers‘ official statements (if applicable).

8.5.2.4. Other pertinent documents submitted in evidence (logs, charts, etc.).

8.5.3. In addition to above (when aircraft is equipped), PIC shall download original flight plan to a floppy disk and turn it in to the C2 center or parent standardization and evaluation office.

8.5.4. OG/CC shall send the original investigation report to the appropriate MAJCOM within 45 days of the event/notification. ANG/AFRC OG/CCs shall send original investigation report through channels to HQ AFRC/IGI within 35 days of the event/notification. HQ AFRC/IGI will send the investigation report to MAJCOM within 45 days of event/notification.

8.5.5. Use OPREP-3 reporting procedures contained in AFI 10-206, *Operational Reporting,* for navigation errors exceeding 24 NMs.

8.5.5.1. When notified of a navigation position error, the PIC (or agency that receives initial notification) shall document the circumstances surrounding the incident (using report format below) and ensure C2 agents submit an OPREP-3.

8.5.5.2. Include the following information in the report:

8.5.5.3. The name and location of agency/unit submitting report.

8.5.5.4. Affected mission identification number.

8.5.5.5. Reference OPREPs-3 to determine type of event (i.e., state "navigation position error.").

8.5.5.6. The date, time (Zulu), and location (e.g., ARTCC area) of alleged infraction.

8.5.5.7. Describe facts and circumstances. Include aircraft type and tail number, unit (aircrew‘s wing or squadron), home base, route of flight, point of alleged deviation, and miles off course.

8.5.6. PICs shall expeditiously report unusual events/circumstances that impact their mission to appropriate MAJCOM agencies. Reportable events include, but are not limited to, spectrum interference, suspected laser exposure, interception, fuel dumping, multiple engine failure, hostile fire, injury to passenger or aircrew member, etc. This list is not all exhaustive. Most events require C2 agents to forward OPREP reports to higher headquarters. In all cases, pass the ―who, what, when, where, why, and how” of the incident to a C2 agency.

8.5.6.1. The Spectrum Interference Resolution Program, covered in AFI 10-707, *Spectrum Interference Resolution Program*, establishes procedures to combat the effect of meaconing, intrusion, jamming, and interference. PICs who encounter electromagnetic interference (EMI) will report the event to the nearest C2 agency as soon as practical.

8.5.6.1.1. Address EMI reports to: HQ AMC SCOTT AFB IL//A63// and addressees listed in AFI 10-707. Send reports via electronic message format with the following information in plain text:

8.5.6.1.1.1. Frequency selected when EMI occurred.

8.5.6.1.1.2. Equipment affected by EMI. Location of the system. The system function, name, nomenclature, manufacturer with model number or other system description. The operating mode of the system, if applicable (frequency agile, pulse doppler, search, etc.).

8.5.6.1.1.3. Description of EMI (noise, pulsed, continuous, intermittent, on so forth).

8.5.6.1.1.4. Effect EMI had on system performance (reduced range, false targets, reduced intelligibility, data errors, etc.).

8.5.6.1.1.5. Date(s) and time(s) of EMI.

8.5.6.1.1.6. Location where EMI occurred (coordinates or line of bearing, if

known, otherwise state as unknown.)

8.5.6.1.1.7. Source of the EMI if known.

8.5.6.1.1.8. List other units that received interference (if known) and their location or distance and bearing from your location.

8.5.6.1.1.9. A clear, concise narrative summary on what you know about the EMI, with any actions taken to resolve the problem.

8.5.6.1.1.10. Whether or not PIC wants expert/technical assistance (include level of security clearance expert requires).

8.5.6.1.1.11. Specify impact the EMI had on your mission.

8.5.6.1.1.12. Provide a POC (Name, Rank, DSN/Commercial Phone Number, and Duty hours).

8.5.6.1.2. C2 agents must prepare an OPREP-3 if EMI is suspected meaconing, intrusion, or jamming, interference sufficient to cause a hazard, or if, in the PIC‘s judgment, the situation warrants such a report.

8.5.6.1.3. PICs shall serve as classification authority for EMI reports. Evaluate an adversaries‘ ability to exploit certain systems using EMI and protect information accordingly. PICs on a non-sensitive mission or who judge the EMI to be interference from a non-hostile source need not classify EMI reports unless that report would reveal system vulnerability. Classify interference report(s) at stations located in combat areas or during sensitive military missions.

8.5.6.2. Suspected Laser Exposure**.** If suspected or exposed to a laser, the aircraft commander will report the event to the nearest C2 agency as soon as practical and ensure the appropriate command and control, intelligence, and medical agencies are also notified.

8.5.6.2.1. Aircrew who suspect exposure to laser radiation from either friendly or hostile sources will report to the Flight Surgeon‘s Office for evaluation immediately upon return to the nearest base.

8.5.6.2.2. The Flight Surgeon and Base SE will manage and coordinate event reporting with MAJCOM/SE, USAFSAM/AFC, 77th AESG/YA, AFSC/SEH and AFRL as directed by AFOSH STD 48-139.

8.5.6.2.3. For immediate Medical Assistance call Tri-Service Laser Injury Hotline (1-800-473-3549 or DSN 240-4784)

8.5.6.2.4. Further mandatory reporting will be done through the NASIC web site on SIPRNET at **http://www.naic.wrightpatterson.af.smil.mil/DEW/LE/index.html** or by calling 937-522-4820/4818/4885/4817 or DSN: 672-####.

8.6. Petroleum, Oil, and Lubricants (POL) - Aviation Fuels Documentation. This section prescribes aviation POL (AVPOL) procedures that ensure correct documentation, form and invoice processing, and program supervision. Reference DESC-I-31, *Purchase of Aviation Fuel and Services at Commercial Locations*. Use the Multi Service Corporation (MSC) air card for the purchase of aviation fuel and ancillary ground services at commercial airports (and some

military installations) worldwide. The air card is authorized for use by all U.S. government aircraft, state, and local law enforcement aircraft, and some foreign government aircraft. All PICs should plan to use the ―platinum" MSC card. In most cases, there will be no changes when refueling at non-Defense Energy Support Center (DESC) contract locations. The MSC card is accepted at approximately 4,800 locations worldwide. A list of all MSC-accepting merchants can be found at **https://www.airseacard.com**. It replaces the Standard Form (SF) 44, **Purchase Order-Invoice-Voucher**, at locations that accept the MSC card.

8.6.1. Responsibilities. Aircrew and maintenance personnel will be familiar with AVPOL procedures and documentation requirements of this chapter. Improper use of MSC card could create financial liability for the purchaser.

8.6.2. Refuel/de-fuel USAF aircraft at DoD locations when ever possible. If DoD service is not available, purchase fuel from other source(s) in the following priority:

8.6.2.1. Defense Fuel Supply Center (DFSC) or Canadian into-plane contracts.

8.6.2.2. Foreign government air forces.

8.6.2.3. Open market.

NOTE:
DoD FLIP en route supplements identify locations with into-plane contracts.

8.6.3. AVPOL Forms Documentation and Procedures.

8.6.3.1. **DD1898, Aviation Fuels Into-Plane Sale Slip** , is the fuel transaction receipt used for purchases at other DoD locations, including DFSC into-plane contract locations. Log and place the DD1898 inside the AF Form 664, *Aircraft Fuels Documenting Log*. The PIC or designated representative shall complete this form. ***NOTE*:** If the contractor insists on a unique invoice along with the DD1898, annotate the vendor's invoice with ―DUPLICATE DD1898 ACCOMPLISHED."

8.6.3.2. **SF 44, Purchase Order-Invoice-Voucher** , may be used to purchase fuel, ground services and/or other authorized products when no MSC card contract is in place.

8.6.3.2.1. SF 44 fuel purchases where FBO agrees to invoice DESC for payment.

8.6.3.2.1.1. The aircrew shall present the SF 44 as the purchase invoice when an FBO refuses to accept the MSC card. The aircrew shall complete the SF 44 and attach it to the FBO vendor ticket/invoice when the FBO also declines use of the SF 44 and uses its own invoice/receipt. Fuel purchases shall be documented on a separate SF 44 from ground services and other authorized products since the FBO must invoice DESC for the fuel and the customer for non-fuel product and services.

8.6.3.2.1.2. Copies 1 and 2 of the SF 44 shall be provided to the FBO. Copy 1 of the SF 44 and one copy of the FBO commercial invoice, if applicable, shall be forwarded to the following address by the FBO to bill/invoice DESC: DESC-RRF, Building 1621-K, 2261 Hughes Avenue, Suite 128, Lackland AFB, Texas 78236.

8.6.3.2.1.3. Copy 3 of the SF 44 and one copy of the FBO commercial invoice, if applicable, shall be provided to the aircrew. Log and place a copy inside the AF

Form 664. Aircrews shall present all fuel purchase receipts to the designated aviation squadron Certifying Official and/or Accountable Official upon return to home station to enable timely validation and financial obligation processing into the Fuels Automated System (FAS).

8.6.3.2.2. SF 44 fuel purchases where the FBO requires cash payment.

8.6.3.2.2.1. Cash fuel purchases are only authorized when either the DOD 4500.54G, *DoD Foreign Clearance Guide*, requires cash payment, or when FBO locations outside the United States and U. S. Territories refuse MSC card and/or SF 44 invoicing processes. Aircrews required to pay cash for aviation fuel purchases shall employ the following procedures (***NOTE:*** these procedures do not apply to non-fuel products or services):

8.6.3.2.2.1.1. The aircrew shall obtain cash from a local DoD Finance source that is charged to an approved Treasury suspense account prior to home station departure.

8.6.3.2.2.1.2. Aircrews shall complete the SF 44 and obtain the FBO fuel vendor annotation in block 11 of the SF 44 to confirm total cash amount and also sign and date the SF 44 blocks 20 and 21. Log and place a copy inside the AF Form 664. Aircrew shall return unused cash to their local DoD Finance source upon return to home station. Present the completed SF 44 (for non-fuel charges only) to the appropriate home station administrative personnel for processing (e.g., Wing Refueling Document Control Officer, Finance Office, etc.)

8.6.3.2.3. SF 44 purchases of ground services and other approved products (not fuel).

8.6.3.2.3.1. Complete a separate SF 44 for non-fuel purchases. Provide the FBO copies 1 and 2 of the SF 44. The FBO shall use copy 1 and one copy of the FBO commercial invoice, if applicable, to directly bill/invoice the purchasing organization. Block 9 of the SF 44 shall reflect the organization name and address of the finance office responsible for payment to the FBO. The purchasing organization shall make payment to the FBO upon receipt of the invoice from the FBO. Log and place a copy inside the AF Form 664.

8.6.3.2.4. If the vendor presents their own form for signature and accepts the SF 44, write the statement "SF 44 Executed" on the vendor‘s form.

8.6.3.2.5. Turn in two copies of the SF 44 to the operations officer at home station.

8.6.3.2.6. Present the aircraft identaplate for purchases at SITCO Agreement locations. Make certain the invoice includes date of transaction, grade of product, quantity issued/defueled, unit of measure, and signature of Air Force member who accepted product. If vendor also requires completed SF 44 write statement, ―AF FORMS EXECUTED” on vendor‘s invoice. Log and place a copy inside the AF Form 664.

8.6.3.3. Purchasing Aviation Fuel in Canada. The DoD and Canadian Department of National Defense have signed a memorandum of understanding allowing DoD aircraft to use the DD1896, when refueling at Canadian airfields with a Canadian National Defense

Contract (CNDC). Use the AIR for fuel purchases at Canadian airports without a CNDC, and for ground handling services at all Canadian airports.

8.6.3.4. Use host country forms to effect purchases at foreign military airfields, including ―replacement-in-kind" locations. Hand scribe information from aircraft identaplate on the local form. Log and place a copy inside the AF Form 664.

8.6.3.5. **DD Form 791** , **DoD In-Flight Issue Log**, is used to log in-flight offload of fuel. The DD Form 791 can be submitted as a paper copy or electronically IAW local procedures. Except for gallons transferred, fill out all blocks on the form. Use eight digit tail numbers for the tanker and receivers. For Navy and Marine receivers, use six digit bureau number. Log and place a copy inside the AF Form 664 and turn it in IAW local procedures.

8.6.3.5.1. Boom operators will:

8.6.3.5.1.1. Collect all pertinent information to document in-flight refuel operation to include, receiver aircraft MDS, unit of assignment, and home station. Obtain information from flying schedule prior to flight, verbally/visually during flight, or by any means following flight. NOTE: Boom operators may submit an incomplete DD791 only after exhausting all means to obtain the required data. In those cases, boom operators must include a brief explanation as to why the data is missing. Unit commanders will develop a local procedure to collect required information prior to the form‘s final processing.

8.6.3.5.1.2. Prior to fuel offload, get receiver aircraft‘s tail number (use interplane radio, boom interphone, or visually if open communication would compromise the mission during clandestine or covert operations or threaten safety of flight). When refueling the same receiver multiple times on a single mission, enter a separate line on the DD791 for each AR. ***NOTE:*** EMCON 2 or 3 training does not disqualify inter-plane radio to obtain or verify AR data. DO NOT use inter-plane radios during actual EMCON 2, 3, or 4 to obtain or verify AR data unless specifically authorized by the mission directive. Consider HAVE QUICK II and secure voice if visual conditions make the tail number too difficult to read.

8.6.3.5.1.3. Do not use ―known/suspected" aircraft serial number that belongs to unit being fueled, but not necessarily the actual aircraft getting fuel. Auditors compare receiver unit aircraft serial numbers with fuel load reports at home station. If ―known/suspected" aircraft tail number billed is incorrect (down for maintenance/unable to fly), the auditor will reject the fuel bill and the tanker unit is liable for the cost of the fuel transferred.

8.6.3.5.1.4. Comply with locally established procedures to complete DD791 for classified in-flight refuelings.

8.6.3.6. **AF Form 1994, Fuels Issue/Defuel Document**, is used to record fuel purchases at USAF bases using a valid DD1896. The PIC or designated representative shall complete the form then log and place a copy inside the AF Form 664**.**

8.6.3.7. **AFTO Form 781H, Aerospace Vehicle Flight Status and Maintenance Document** , is used to record POL actions for a particular airframe IAW applicable

directives. The PIC or designated representative shall complete the form and submit to maintenance debrief.

8.6.3.8. **DD1896, DoD Fuel Identaplate**, is the aircraft fuel and oil charge card.

8.6.3.9. The PIC will verify the AFTO Form 781H is completed and turned in to maintenance debriefing following the mission.

8.6.3.10. For off-station missions, the PIC will complete or verify accuracy of the AF Form 15, 315, 664, AFTO Form 781H, DD1898, and associated fuels receipts then place them in the AF Form 664 (use eight digits for all USAF aircraft tail number entries). The PIC will transmit all AF Form 664 information via phone, fax, or message if mission causes him/her to be off-station past the last day of the month

8.6.3.11. Pilots will accurately record fueling actions on the AFTO Form 781H.

8.6.3.11.1. Receiver capable aircraft will record fuel onloads using AFI Form 664. Record issuing tanker‘s refueling information (i.e., tail number, unit of assignment, and home station.).

8.6.3.12. Prior to off-station mission or deployment, maintenance technicians will obtain sufficient fuels transaction forms to complete the deployment. Unless directed otherwise by the PIC, accurately complete all ground refueling/de-fueling documents and place them inside the AF Form 664.

8.6.3.13. Wing scheduling will:

8.6.3.13.1. Provide a member to the AVPOL advisory group.

8.6.3.13.2. By the 7th of each month, prepare monthly report for invoice control officer (ICO). Include organization (squadron), MDS, programmed flying hours for previous and current months in the report.

8.6.3.13.3. Include receivers‘ MDS, command of assignment, unit or squadron, DoDAAC for USAF receivers, UIC for USN receivers, POC name, phone number, and home station name (for each in-flight refueling sortie) on the weekly schedule.

8.6.3.13.4. Maintain the wing‘s current master list of receiver unit POCs and telephone numbers.

8.7. Not Used.

8.8. AMC Form 54, Aircraft Commander’s Report on Services/Facilities , is used to report level of excellence for services encountered during mobility operations. Be quick to identify outstanding performers and attempt to resolve problems at lowest level practical. PICs should advise affected agency on their intent to submit an AMC Form 54. Provide a copy of the completed form to local station AMC C2 agency. Upon return to home station, PICs will coordinate form with SQ/CC and OG/CC. For Forms 54 that require AMC coordination, OG/CCs shall review and submit AMC Form 54 to 18AF/CC.

8.9. AMC Form 196, Aircraft Commander’s Report on Crew Member , is used to document an aircrew member or mission essential ground personnel‘s outstanding, below average, or unsatisfactory performance during a mobility mission. Be quick to identify outstanding performers and attempt to solve problems at lowest level practical (provide local

senior leaders opportunity to resolve problems as they occur). Send the report to subject‘s unit commander.

8.10. Not Used.

8.11. AF Form 3578, Tanker Activity Report , is used to document tanker airframe sorties, air refueling user events, and flying hour expenditures. Complete the AF Form 3578 IAW AFI 11-222, *Tanker Activity Report.*

Chapter 9

TRAINING AND OPERATING LIMITATIONS

9.1. General. This chapter outlines training policy and applies to all AMC and AMC-gained units performing AMC-directed missions, local training, or off-station training flights.

9.2. Passengers on Training Missions.

9.2.1. Initial qualification or re-qualification for pilots will not be conducted with passengers onboard.

9.2.2. Mission qualification training may be conducted on sorties with passengers onboard only if the individual in training is qualified (completed flight evaluation with a valid AF Form 8). Tanker and receiver AR is authorized if the pilot flying is qualified.

9.2.3. Touch-and-go landings are prohibited with passengers onboard (N/A with MEGP passengers).

EXCEPTION:
When approved by the MAJCOM, maintenance and civilian employees, under direct contract to the DoD and engaged in official direct mission support activities, considered ―mission essential" may be onboard when touch-and-go landings are performed providing the mission is a designated training flight and an IP or EP is in command.

9.2.4. Multiple practice approaches will not be accomplished with passengers onboard (N/A with MEGP passengers).

9.2.5. IAW 11-202V3, practice emergency procedures are prohibited with any passengers onboard. Passengers are defined as anyone listed on a passenger manifest or listed on flight orders as MEGP.

9.3. Touch-and-go Landing Limitations.

9.3.1. Touch-and-go landings will only be accomplished under the direct supervision of an IP/EP, or SQ/CC certified AC. Refer to AFI 11-2KC-135V1 for certification requirements.

9.3.2. Limitations.

9.3.2.1. Comply with all flight manual restrictions and procedures.

9.3.2.2. Use a runway of sufficient length and width to permit a safe, normal, full-stop landing.

9.3.2.3. Minimum ceiling/visibility: 300 ft and RVR 4000 (3/4 SM visibility) with direct IP supervision, 1000 ft and 2 miles visibility for touch-and-go certified ACs.

9.3.2.4. WET runway, or RCR measured 9 or higher.

9.3.2.5. Do not accomplish touch-and-go landings on slush covered runways.

9.3.2.6. Maximum crosswind component: 15 knots with direct IP supervision, 10 knots for non-instructors.

9.3.2.7. Touch-and-go landings may be performed with cargo on board provided PIC and BO determine suitability of the cargo. **Touch-and-go landings with hazardous cargo on board are prohibited.**

9.3.2.7.1. Cargo security is checked prior to the first touch-and-go and thereafter at an interval determined by the PIC (normally not to exceed 1 hour). PICs must allow additional time required for this inspection.

9.3.2.8. All PMCs operating

9.4. Training on Operational Missions.

9.4.1. Crews may perform multiple approaches and touch-and-go landings on operational airlift (TWCF) and 618 TACC-directed missions provided the following requirements are met:

9.4.1.1. Normal touch-and-go limitations apply and MEGPs are briefed of the activity.

9.4.1.2. All transition training will be accomplished during the first 12 hours of the FDP.

9.4.1.3. Pre-mission coordination requirements. As part of pre-mission planning, aircraft commanders will contact parent wing current operations and obtain training mission number(s) for use at each en route location(s) where training events are planned. In addition, aircraft commanders will coordinate with and receive approval from unit OG/CC and the airfield(s) where training is to be accomplished. They will then coordinate with the 618 TACC to ensure adequate ground time is available at planned training locations to allow for planned training events, clearing customs, required crew rest, etc. Once complete, wing current operations will coordinate with 618 TACC to re-cut the mission and add the training mission number(s) in GDSS/C2IPS.

9.4.1.4. Upon initial arrival at the training location, close out the current line on the AFTO Form 781 and log the training time on the next line using the appropriate training mission symbol and number.

9.4.2. Crews may accomplish AR training on operational missions provided applicable items of **9.4.1.3** and the following requirements are met:

9.4.2.1. All mission-required fuel is offloaded/onloaded prior to commencing any training.

9.4.2.2. Passengers and MEGPs are briefed of the activity.

9.5. Simulated Emergency Flight Procedures.

9.5.1. Simulated emergency flight procedures will be conducted IAW AFI 11-202V3 and this instruction.

9.5.1.1. The PIC or IP will alert all crewmembers prior to practicing emergency procedures. (N/A CFIC)

9.5.1.2. In an actual emergency, terminate all training and flight maneuver practice. Training should be resumed only when the PIC determines it is safe.

9.5.1.3. Unless specifically authorized elsewhere in this chapter, do not practice emergency procedures that degrade aircraft performance or flight control capabilities in flight.

9.5.2. Engine Out Limitations (Simulated). Do not practice actual engine shutdown.

9.5.2.1. Performance. Paragraph **9.11** requirements apply. Do not simulate failure of two engines in flight (simulator only demonstration, except CFIC).

NOTE:
During a go-around or missed approach, use the asymmetric engine as required to ensure at least a 3.3% climb gradient.

9.5.2.2. FPCs and FPQs may practice engine-out maneuvers under direct IP supervision.

9.5.2.3. All PMCs must be operating.

9.5.2.4. Weather Minimums:

9.5.2.4.1. Maximum crosswind for simulated engine-out landings is 15 knots.

9.5.2.4.2. **Day** – circling minimums for the approach being flown (600/2 if none published).

9.5.2.4.3. **Night** – 1000 feet and 2 statute miles or circling minimums for the approach being flown, whichever is higher.

9.5.2.5. Simulated Engine Failure will not be accomplished below 200 feet AGL.

9.6. Initial Qualification Pilots. Initial qualification pilots enrolled in a MAJCOM approved training course may accomplish tanker/receiver AR under direct IP supervision.

9.7. Flight Maneuvers.

9.7.1. Practice of the following maneuvers are prohibited in-flight:

9.7.1.1. Stalls and approach to stalls including initial buffet.

9.7.1.2. Dutch roll.

9.7.1.3. Emergency descent.

9.7.1.4. Unusual attitudes.

9.7.1.5. Compound emergencies (except simulated engine-out with rudder power off or FCAS off).

9.7.1.6. Tactics maneuvers (except those specified in **Chapter 17**, or those specifically authorized by MAJCOM/A3/DO).

9.7.1.7. Turns greater than 45 degrees bank (except MAJCOM-approved tactics maneuvers).

9.7.1.8. Simulated jammed stabilizer demonstration approaches.

9.7.2. The following maneuvers are authorized for qualification and continuation training. Perform maneuvers restricted to (FTU only) during formal training under direct FTU instructor supervision. Direct instructor pilot (IP) supervision requires the IP to have immediate access to the controls.

9.7.2.1. Approach and Landing, Simulated Engine-Out: (AC/PIQ) or (direct IP supervision).

9.7.2.2. Approach and Go-Around, Simulated Engine-Out: (AC/PIQ) or (direct IP supervision).

9.7.2.3. Approach and Go-Around, Simulated Engine-Out, Rudder Power Off: (direct IP supervision).

9.7.2.4. Landing, Simulated Engine-Out, 4-Engine Takeoff: (direct IP supervision).

9.7.2.5. Simulated Engine Failure, Takeoff Continued: (direct IP supervision).

9.7.2.6. Simulated 2-Engine Landing (OFT, or FTU).

9.7.2.7. Landing Attitude Demonstration: (direct IP supervision).

9.7.2.8. Spoiler and Lateral Control Demonstration: (IP supervised, must be accomplished above 10,000 feet AGL).

9.7.2.9. Trim Demonstration: (IP supervised).

9.7.2.10. No-Airspeed/No AOA Approach and Landing: (OFT, or FTU).

9.7.2.11. Air Refueling Demonstrations: R064-067, R071, R072, R225, R400-460 (FTU).

9.7.2.12. Landing Gear Manual Extension and Main Flap Manual Operation exercises.

9.7.2.13. Tanker or Receiver Practice Emergency Separation (Air Refueling Breakaway).

9.8. Debriefing. Review and evaluate overall training performed. Each student or aircrew member should thoroughly understand what training/evaluation has been accomplished. Ensure all training or evaluated areas are documented.

9.9. Simulated Instrument Flight. Artificial vision restricting devices are not authorized for any phase of flight. Simulated instrument flight may be flown and logged without the use of a vision-restricting device.

9.10. Operating Limitations.

9.10.1. Takeoffs.

9.10.1.1. Maximum crosswind for takeoff during peacetime is 25 knots. RCR may limit this capability.

9.10.1.1.1. For locally executed operational missions, OG/CC may approve takeoffs of aircraft within the maximum flight manual limitations.

9.10.1.1.2. For MAJCOM directed off-station missions, MAJCOM Stan/Eval may approve takeoffs of aircraft within the maximum flight manual limitations.

9.10.2. Rudder power will be on for all takeoffs and landings. The EFAS will be on for all KC-135R/T takeoffs and landings.

9.10.3. Performance Requirements. Do not practice traffic pattern operations, instrument approaches, low approaches or go-arounds at gross weights that will not afford a minimum of 3.3% climb gradient at threshold speed minus 10 knots, 3 engines, flaps 30, gear down,

symmetric N1/EPR setting and selected asymmetric N1/EPR setting (between idle and maximum asymmetric N1/EPR).

9.10.4. Planned Go-Arounds and Visual Low Approaches. Initiate a planned missed approach not later than:

9.10.4.1. Precision approach - DH (or 200-feet HAT, whichever is higher).

9.10.4.2. Non-precision approach - missed approach point (MAP).

9.10.4.3. Visual approach or VFR pattern – 100 feet AGL.

NOTE:
Not applicable to landing attitude demonstrations.

9.10.5. Normally, do not exceed 30 degrees of bank during traffic pattern operations. (N/A Tactics maneuvers)

9.10.6. Practice Landing Gear Manual Extension and Main Flap Manual Operation. Accomplish clear of clouds (not applicable with IP supervision). May be accomplished day or night.

9.10.7. Landings.

9.10.7.1. Maximum crosswind during peacetime is 25 knots. RCR may limit this capability.

9.10.7.1.1. For locally executed operational missions, OG/CC may approve full-stop landings of aircraft within the maximum flight manual limitations.

9.10.7.1.2. For MAJCOM directed off-station missions, MAJCOM Stan/Eval may approve full-stop landings of aircraft within the maximum flight manual limitations.

9.10.7.2. Flap setting - Do not practice landings with less than 30 flaps.

9.10.7.3. Gross weight. Normally, landing gross weight will not exceed 200,000 lbs

9.10.7.3.1. For locally executed training or operational missions, OG/CC may approve touch and go landings up to 210,000 lbs and full stop landings up to 230,000 lbs gross weight, provided aircrew experience, airfield conditions, brake energy limits, and stopping distance permits.

9.10.7.3.2. For MAJCOM directed off-station missions, MAJCOM Stan/Eval (AFRC/A3 for AFRC missions, WG/CC for ANG missions) may approve full stop landings up to 235,000 pounds, provided aircrew experience, airfield conditions, brake energy limits, and stopping distance permits.

9.10.7.3.3. MAJCOM/A3/DO (WG/CC for ANG missions) approval is required for landing at gross weights above 235,000 pounds.

9.10.7.3.4. For deployed forces flying contingency missions, DIRMOBFOR EOG/CC or AEG/CC is the approval authority for full stop landings up to over 235,000 lbs. If an EOG/CC has not been established, DIRMOBFOR is the approval authority.

9.10.7.3.5. This policy is no replacement for common sense and should not be used as a routine planning factor. This policy will be applied on a case-by-case basis to

expedite aircraft recovery and to minimize or avoid the need to jettison fuel. PICs and unit leadership will use all ORM tools to ensure aircrew experience, airfield conditions and landing performance data supports the decision to conduct landings at the higher gross weights.

9.10.7.4. Multiple full-stop landings - Compute brake energy prior to each subsequent takeoff.

9.11. (AMC/ANG/AFRC) Aircraft Commander Takeoff and Landing Policy.

9.11.1. Unless the other pilot in the seat is a certified aircraft commander or higher, PICs with less than 100 primary assigned aircraft (PAA) hours since certification will make all takeoffs and landings under any of the following conditions:

9.11.1.1. Ceiling/visibility less than 300 feet and/or RVR 40 (3/4 statute mile visibility).

9.11.1.2. RCR less than 12.

9.11.1.3. Crosswind component greater than 15 knots.

Chapter 10

AIRCREW OPERATIONS IN CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR THREAT ENVIRONMENT

10.1. Overview. The proliferation of Chemical, Biological, Radiological, and Nuclear (CBRN) weapons and the means to deliver them present serious security threats to the global operations of air mobility forces. This chapter describes the CBRN threat, passive defense measures to mitigate that threat, and guidance for ground and flight operations in a contaminated environment.

10.2. Understanding the CBRN Threat.

10.2.1. Chemical Weapons. Militarily significant chemical weapons include nerve, blister, choking, and blood agents. A key point for aircrew members to remember is that time is on your side. The ultra-violet (UV) rays of the sun, high temperatures, and high absorption rates of chemicals all decrease their lethality. Most chemical agents will either evaporate or absorb into surfaces. For decontamination, cleaning with hot soap and water and/or a 5 percent bleach solution currently appears to be the best and most practical method of removing chemical agents that may remain as a contact hazard on glass, and unpainted metal. Currently, the only decontaminate authorized for use on aircraft is soap and water. NOTE: Recent tests indicate that as a decontaminated aircraft dries, the absorbed chemical warfare agent (CWA) may resurface from painted surfaces causing contact and vapor hazards.

10.2.2. Biological Weapons. Biological warfare agents (BWA) are normally divided into three areas: bacteria (i.e., Anthrax) that live outside the cell, reproduce, and are normally susceptible to antibiotics; toxins (i.e., Ricin), that are poisons produced by living organisms or plants; and viruses (i.e., Smallpox) that normally require the host of a living cell to survive and reproduce. Viruses and toxins do not respond to antibiotics. It is probable that the medical community would be the first to recognize that an upsurge in ―flu-like symptoms" is actually a bio attack. Although BWA are degraded by UV rays, humidity and high/low temperatures, some BWA (i.e., Anthrax spores) may have a long life, lasting decades under the right conditions. Current immunizations and good personal hygiene help prevent infection.

10.2.3. Radiological Weapons. The radiation dispersal device (RDD), or so-called ―dirty bomb," is the typical radiological weapon. RDD is any device that disseminates radioactive material without using a nuclear detonation. Key points to remember are that shielding and distance are the best defenses against radiation exposure.

10.2.4. Nuclear Weapons. The threat from a nuclear device is from the initial blast, heat, initial radiation, and residual fallout. In addition, the Electromagnetic Pulse (EMP) from a nuclear detonation can damage electronic equipment. The best protection is a combination of shielding, distance from the blast, and limited time of exposure.

10.3. CBRN Passive Defense Measures. Passive defense measures are those activities conducted to negate, contain, and manage the effects of CBRN attack. Passive defense measures include pre, trans, and post-attack actions designed to mitigate the CBRN threat through contamination avoidance, protection, and contamination control.

10.3.1. Contamination Avoidance. Contamination avoidance is the most important passive defense measure. Techniques for contamination avoidance include: inflight diversion, survival launch, and minimizing exposure to contaminated cargo, aerospace ground equipment (AGE), and material handling equipment (MHE).

10.3.1.1. Inflight Diversion. When advised that a destination airfield is under CBRN attack or has been contaminated, the aircrew will divert to an uncontaminated airfield, if at all possible. Authority to land at a contaminated airfield will be specified in the controlling OPORD.

10.3.1.2. Survival Launch. If caught on the ground during attack warning, every reasonable effort will be made to launch to avoid the attack. Upon proper clearances, aircrew may launch to survive if they have sufficient fuel and unrestricted, safe access to the runway. In practice, this option may only be practical for aircraft that have just landed or aircraft at or near the end of the runway. If launch is not possible, shut down engines and avoid running environmental control systems. Close aircraft doors/hatches, don Individual Protective Equipment (IPE), and seek personal protective cover on the base. If time does not permit using base facilities, and the attack is a missile attack, remain in the sealed aircraft for a minimum of one-hour after the attack and/or follow host-base guidance.

10.3.1.3. Avoiding Cross Contamination from AGE, MHE, and Cargo. All formerly contaminated equipment and cargo must be marked to facilitate contamination avoidance and the use of protective measures. Additionally, the air shipment of formerly contaminated cargo requires special precautions and must be specifically authorized by the senior transportation commander.

10.3.2. Protection. When exposure to chemical and/or biological agents cannot be avoided, protection provides the force with the ability to survive and operate in a CBRN environment. Protection is afforded by individual protective equipment, collective protection, and hardening of facilities.

10.3.2.1. Individual Protective Equipment. The current in-flight protective gear for aircrew members is the Aircrew Chemical Defense Ensemble (ACDE). The ACDE includes the newer Aircrew Eye-Respiratory Protection System (AERPS) above the shoulders and the CWU-66/P or CWU-77/P Integrated Aircrew Chemical Coverall (IACC). The Ground Crew Ensemble (GCE) consists of the protective mask, C2 series canister (or filter element for MCU-2A/P protective mask), and over garment, boots, and gloves. The ACDE and GCE provide protection against chemical and biological agents. They do not provide blast or radiation protection from an RDD or nuclear detonation. The ACDE requires care during donning using "buddy dressing" procedures and Aircrew Life Support (ALS) expertise during processing through the Aircrew Contamination Control Area (ACCA). (Note: AECMs will utilize the MCU-2A series mask).

10.3.2.1.1. ACDE/GCE Issue. Aircrews will be issued sized ACDE and GCE at home station. Aircrews will ensure their ACDE and GCE are available at all times while in a CBRN threat area. Aircrew members will confirm the mobility bag contents and correct sizes.

10.3.2.1.2. ACDE Wear During Ground Operations. Because aircraft contamination is unlikely to occur during flight, ground operations represent the highest threat to aircrew safety. Protection from enemy attacks and exposure to liquid chemical agents is paramount. Aircrew should limit activities to essential duties only, and separate ground duties from air duties.

10.3.2.2. Collective Protection. Collective protection provides a temperature-controlled, contamination-free environment to allow personnel relief from continuous wear of IPE such as the ACDE. The basic concept for most facility collective protective solutions is to employ overpressure, filtration, and controlled entry/exit. The intent is to provide rest and relief accommodations, as well as provide medical treatment in contamination free zone. Crewmembers should avail themselves of facilities, if provided, on the airfield.

10.3.2.3. Hardening. Permanent and expedient hardening measures are used to strengthen buildings and utility systems or provide barriers to resist blast effects. To reduce the potential of vapor exposure in facilities without collective protection; seal windows and doors, turn off HVAC systems, and use room above the first floor when possible.

10.3.3. Contamination Control. In the post-attack environment, contamination control measures limit the spread of chemical, biological, and radiological contamination through disease prevention measures, decontamination, and use of Exchange Zone (EZ) operations. Effective contamination control helps sustain air mobility operations by minimizing performance degradation, casualties, or loss of material.

10.3.3.1. Disease Prevention. Up-to-date immunizations, standard personal hygiene practices, and the use of chemoprophylaxis are effective biological warfare defensive measures.

10.3.3.2. Decontamination.

10.3.3.2.1. Inflight Decontamination. Air washing is a useful inflight decontamination technique for removing most of the liquid agent from aircraft metal surfaces. However, vapor hazards may remain in areas where the airflow characteristics prevent complete off-gassing (i.e., wheel wells, flap wells, rivet and screw heads, joints, etc.). Flights of at least 2 to 4 hours are recommended, and lower altitudes are more effective than higher altitudes. Fly with the aircraft configured (gear, flaps, and slats extended) as long as possible to maximize the airflow in and around as many places as possible. Be advised that exterior contamination may seep into the aircraft interior creating a vapor hazard for aircrews. Use of ACDE is recommended. Follow smoke and fume elimination procedures to help purge interior contamination.

10.3.3.2.2. Limits of Decontamination. Complete decontamination of aircraft and equipment may be difficult, if not impossible, to achieve. Formerly contaminated assets will be restricted to DOD-controlled airfields and not released from US government control.

10.3.3.3. Exchange Zone (EZ) Operations**.** The AMC Concept for Air Mobility Operations in a Chemical and Biological Environment (CB CONOPS) describes a method for continuing the vital flow of personnel into a contaminated airfield while

limiting the number of air mobility aircraft and personnel exposed to the contaminated environment. The purpose of the EZ is to minimize the spread of contamination within the air mobility fleet, preserving as many aircraft as possible for unrestricted international flight. The EZ is an area (located at uncontaminated airfield) set aside to facilitate the exchange of uncontaminated (clean) cargo/passengers to a contaminated (dirty) airframe, or visa versa, without cross-contamination. Additional information on the EZ is available through HQ AMC/A3X.

10.4. Flight Operations.

10.4.1. Mission Planning. Aircrews must be mentally prepared to face the dangers of CBRN weapons. Flight/mission planning must be thorough. Aircraft commanders should emphasize ACDE wear, crew coordination, CBRN hazards and countermeasures, inflight diversion, plans for onload/offload in the event of a ground attack, and plans for the return leg in the event of aircraft contamination. Alternative scenario plans should also be considered in the event MOPP conditions change.

10.4.2. Establishing the Threat Level. Aircrews should monitor command and control channels to ensure they receive the latest information concerning the destination‘s alert condition. Diversion of aircraft to alternate "clean" locations may be required, unless operational necessity otherwise dictates. The 618 TACC or theater C2 agency (normally through the controlling OPORD) will direct aircrew pre-exposure activities such as medical pre-treatment for chemical/biological exposure or issue of dosimetry for potential radiological hazards.

10.4.3. Fuel Requirements. Extra fuel may be needed to compensate for altitude restrictions as the result of CB agent exposure. During purge periods, the aircraft will be unpressurized. Although the aircrew can use the aircraft oxygen systems, passengers wearing GCE cannot, thus restricting the aircraft cruise altitude and increasing fuel requirements accordingly.

10.4.4. Oxygen Requirements. Operating a contaminated aircraft will increase oxygen requirements. Aircrew wear of ACDE will require use of the aircraft oxygen system to counter actual/suspected contamination. Using the 100 percent oxygen setting offers the greatest protection in a contaminated environment. Appropriate oxygen reservoir levels must be planned to meet higher consumption rates. Use the aircraft Dash 1 charts to calculate the required reservoir levels.

10.4.5. Donning Equipment. Aircrew will don ACDE based on the alarm condition (See Airman‘s Manual (AFMAN 10-100). Use the "buddy dressing" procedures, and refer to AMCVA 11-303, *AERP Donning Checklist* and AMCVA 11-304, *ACDE Donning Checklist,* to ensure proper wear. When wearing the ACDE, Atropine and 2 PAM Chloride auto injectors will be kept in the upper left ACDE pocket. If the integrated survival vest/body armor is worn, the Atropine and 2 PAM Chloride auto injectors may be kept in the lower right flight suit pocket. This standardized location will enable personnel to locate the medication should an individual be overcome by CWA poisoning. M-9 paper on the flight suit will facilitate detection of liquid chemical agents and ACCA processing. M-9 paper should be placed on the flight suit prior to entering the CBRN threat area or when an alarm ―yellow” or higher has been declared. When inbound to a CBRN threat area, prior to descent, the aircraft commander will ensure crew and passengers don appropriate protective equipment IAW arrival destination‘s MOPP level and brief aircrew operations in the CBRN

threat area. As a minimum, this briefing will include: flight deck isolation, oxygen requirements, air conditioning system requirements, IPE requirements, ground operations, and MOPP levels. Aircrew members must determine if the wear of the integrated survival vest/body armor and LPUs will restrict dexterity and mobility to the point that it becomes a safety issue. If the aircrew deems the equipment to create a safety of flight concern, then the items may be pre-positioned (instead of worn) on the aircraft to be readily available to the aircrew.

10.4.6. Communicating Down-Line Support. Pass aircraft and cargo contamination information through command and control channels when inbound. This information will be used to determine if a diversion flight is required or decontamination teams are needed. Report the physical condition of any crew/passengers who are showing agent symptoms and whether they are wearing chemical defense ensembles.

10.5. Ground Operations.

10.5.1. Crew Rest Procedures. Operational necessity may require the aircrew to rest/fly in a contaminated environment. If the mission is not being staged by another aircrew or pre-flight crews are not available, the aircrew may pre-flight, load, and secure the aircraft prior to entering crew rest. The departing aircrew will perform necessary crew preparations and pre-flight briefings. Then, they will report to the ACCA for processing and ACDE donning with assistance from ALS personnel. If possible, aircrew transport should be provided in a covered vehicle. Aircrews should avoid pre-flighting the aircraft prior to departure to prevent contamination spread to them and/or the aircraft. As aircrews proceed to fly, they will require assistance from ground support personnel in removing their aircrew protective overcape and overboots prior to entering the aircraft.

10.5.2. Onload and Offload Considerations. Extreme care must be exercised to prevent contamination spread to the aircraft interior during ground operations, particularly to the flight deck area. Reduce the number of personnel entering the aircraft. Contaminated engine covers, safety pins and chocks will not be placed in the aircraft unless sealed in clean plastic bags and properly marked IAW technical order requirements. Aircrew members entering the aircraft will remove plastic overboots and overcape portions of the aircrew ensemble and ensure flight/mobility bags are free of contaminants and placed in clean plastic bags. Prior to entering the aircraft all personnel should implement boot wash/decontamination procedures. Aircrew exiting aircraft into a contaminated environment will don plastic overboots and overcape prior to leaving the aircraft.

10.5.3. Communications. Conducting on/offloading operations, while wearing the complete ACDE, complicates communications capability. Use the mini-amplifier/speaker or the aircraft public address system and augment with flashlight and hand signals, as required.

10.5.4. Airlift of Retrograde Cargo. Only CRITICAL retrograde cargo will be moved from a contaminated to an uncontaminated airbase. Critical requirements are pre-designated in theater war plans. Onload cargo will be protected prior to and while being transported to the aircraft. If contaminated, protective cover(s) will be removed/replaced just prior to placing the cargo on the aircraft. It is the user‘s responsibility to decontaminate cargo for air shipment. The airlift of contaminated or formerly contaminated cargo requires the approval of the senior transportation commander.

10.5.5. Passenger/Patients. A path should be decontaminated between the aircraft and the ground transportation vehicle to reduce interior contamination when loading/unloading passengers/patients. Normally, externally contaminated patients and those infected with contagious biological agents will not be transported onboard AMC or AMC-procured aircraft. The AMC/CC is the waiver authority to this policy. (NOTE: An altitude below 10,000 feet is recommended due to AECM use of the ground chemical mask.)

10.5.6. Physiological Factors. Aircraft commanders must be very sensitive to the problems resulting from physical exertion while wearing ACDE. The aircraft commander should consider factors such as ground time, temperature and remaining mission requirements when determining on/offload capabilities. Individuals involved should be closely monitored for adverse physiological effects.

10.5.7. Work Degradation Factors. Work timetables need to be adjusted to minimize thermal stress caused by wearing the ACDE. Aircrews must weigh all factors when performing in-flight and ground duties. The following are degradation factors for wearing full GCE, and may also be used to represent the Task Time Multipliers for the ACDE. A more extensive discussion of this subject is found in AFMAN 10-2602, *Nuclear, Biological, Chemical, and Conventional (NBCC) Defense Operations and Standards*.

Figure 10.1. Task Time Multipliers

Heat Category	WBGT[1] Index (ºF)	Light (Easy) Work		Moderate Work		Hard (Heavy) Work	
		Work/ Rest[2]	Water Intake[3] (Quart/Hour)	Work/ Rest[2]	Water Intake[3] (Quart/Hour)	Work/ Rest[2]	Water Intake[3] (Quart/Hour)
1	78-81.9	NL[4]	1/2	NL	3/4	40/20 min	3/4
2	82-84.9	NL	1/2	50/10 min	3/4	30/30 min	1
3	85-87.9	NL	3/4	40/20 min	3/4	30/30	1
4	88-89.9	NL	3/4	30/30 min	3/4	20/40 min	1
5	=90	50/10 min	1	20/40 min	1	10/50 min	1

NOTES:

1. If wearing MOPP 4, add 10ºF to Wet Bulb Globe Temperature (WBGT). If wearing personal body armor in humid climates, add 5ºF to WBGT.
2. Rest means minimal physical activity (sitting or standing), accomplished in shade if possible.
3. ***Caution:*** Daily fluid intake should not exceed 12 quarts. Hourly fluid intake should not exceed 1 quart. The work/rest time and fluid replacement volumes will sustain performance and hydration for at least 4 hours of work in the specified work category. Individual water needs will vary ± quart/ hour.
4. NL=no limit to work time per hour.

10.5.8. Outbound with Actual/Suspected Chemical Contamination. Once airborne with actual/suspected vapor contamination, the aircraft must be purged for 2 hours using Smoke

and Fume Elimination procedures. To ensure no liquid contamination exists, a close inspection of aircrew, passenger ensembles, and cargo will be conducted using M-8 and M-9 detection paper. Detection paper only detects certain liquid agents and will not detect vapor hazards. Above the shoulder ACDE should only be removed if there is absolutely no vapor hazard. Be advised that residual contamination (below the detectable levels of currently fielded detection equipment) may be harmful in an enclosed space. The aircrew must take every precaution to prevent spreading of liquid contaminants, especially on the flight deck area. The best course is to identify actual/suspected contamination, avoid those areas for the remainder of the flight, and keep the cargo compartments cool. If an aircrew member or passenger has been in contact with liquid contaminants, all personnel aboard the aircraft will stay in full ACDE/GCE until processed through their respective contamination control area (CCA). Upon arrival, the contaminated aircraft will be parked in an isolated area and cordoned to protect unsuspecting ground personnel.

10.5.9. Documenting Aircraft Contamination. When it is suspected or known that an aerospace vehicle or piece of equipment has been contaminated with a radiological, biological or chemical contaminant, a Red X will be entered and an annotation will be made in historical records for the lifecycle of the equipment.

10.5.10. 10-Foot Rule. The 10-foot rule was developed in order to provide guidance for protecting personnel using or handling contaminated resources (such as pallets) or working in locations with materials that might retain a residual chemical. The 10-foot rule embodies a safety factor that goes beyond current OSD guidance (which allows removal of IPE whenever detectors no longer detect a chemical agent vapor hazard). There are two phases associated with the 10-foot rule.

10.5.10.1. Initial Phase. During the initial phase, personnel will remain in MOPP 4 whenever they stay within 10 feet of the contaminated equipment for more than a few seconds. This MOPP level provides personnel the maximum protection from the chemical agent as it transitions from a contact and vapor hazard to a vapor hazard only.

10.5.10.2. Follow-on Phase. In the follow-on phase, personnel will use gloves of a sort (i.e. leather, rubber, cloth, etc.) when operating on or handling the contaminated equipment. Although a contact hazard is unlikely, relatively small amounts of the agent may still be present. The use of gloves will ensure that unnecessary bare skin contact with agent residue is avoided.

10.5.10.3. **Table 10.1** shows times associated with initial and follow-on phases of the 10-foot rule. To simplify response processes, commanders may choose to use the worst case scenario as the foundation for all 10-foot rule actions, i.e., 24 hours for the initial phase and all periods of time greater than 24 hours for the follow-on phase.

Table 10.1. Ten-Foot Rule Time Standards (Source: AFMAN 10-2602).

"10 Foot Rule" Time Standards*		
Agent	**Initial Phase**	**Follow-on Phase**
HD	0-12 HRS	Greater than 12 hrs
GB	0-12 HRS	Greater than 12 hrs

“10 Foot Rule” Time Standards*		
Agent	**Initial Phase**	**Follow-on Phase**
GD, GF, GA	0-18 HRS	Greater than 12 hrs
VX, R33	0-24 HRS	Greater than 24 hrs
* Rule is based on expected contamination on an airbase following a chemical attack. Adjust times if agent concentration is higher than expected.		

Chapter 11

NAVIGATION PROCEDURES

11.1. General. This chapter establishes procedures and requirements for worldwide enroute KC-135 navigation. It is to be used in conjunction with procedures and requirements set forth in AFI 11-202, Volume 3, AFI 11-217, and FLIP. Since airspace and associated navigational aid equipment capability are rapidly evolving, pilots must maintain an in depth knowledge of current requirements/policies.

For Navigator responsibilities (SOAR and Non-SOAR) during 4-person operations see paragraph **6.58**.

11.2. Navigation Databases.

11.2.1. Flight Planning Navigation Database. Flight plans created using the Advanced Computer Flight Plan (ACFP) or the Portable Flight Planning Software (PFPS) use the navigation date from the Digital Aeronautical Flight Information File (DAFIF). Pilots are responsible for ensuring the accuracy of flight plan waypoints against current aeronautical charts, terminal instrument procedures, or FLIP documents (i.e. AP/1B). These flight plans may be saved to a PCMIA card and loaded directly into the FMS using the FMS data loader.

11.2.2. Aircraft Navigation Database. The FMS uses a navigation database provided by the National Geospatial-Intelligence Agency (NGA). This database is stored on a PCMIA card that is uploaded into the FMS prior to flight. The FMS is not certified for terminal operations in Block 30.

11.2.2.1. The PIC will ensure the navigation waypoints loaded in the FMS flight plan accurately reflect the intended/cleared route of flight. This can be done using one or more of the following methods:

11.2.2.1.1. Latitude/longitude from current FLIP.

11.2.2.1.2. Bearing/distance from a flight plan after latitude/longitude are verified for each waypoint.

11.2.2.1.3. Ground Based NAVAIDs.

11.2.2.2. In some cases, waypoints in the database may differ from the charted instrument procedure. Differences less than 0.3nm are acceptable for GPS overlay approaches. For stand-alone GPS and RNAV approaches, the maximum allowable difference is 0.1nm. If distance information varies by more than these tolerances, the procedure shall not be flown. Variation between charted final approach course in the instrument approach procedure and the final approach course computed by the aircraft should be no more than 5 degrees. If the two differ by more than 5 degrees, the procedure is not authorized.

11.3. Operations in International/Territorial Airspace. (See FLIP, FCG, and AP, for further guidance). US Military aircraft and DoD personnel entering another nation to conduct US government business must have the approval of the foreign government concerned to enter their

airspace. Foreign clearances for US international air operations are obtained through US officials known as Defense Attache Officers (DAOs).

11.3.1. There are essentially two types of airspace: international airspace and territorial airspace. International airspace includes all airspace seaward of coastal states" territorial seas. Military aircraft operate in such areas free of interference or control by the coastal state. Territorial airspace includes airspace above territorial seas, archipelagic waters, inland waters, and land territory, and is sovereign airspace. Overflight may be conducted in such areas only with the consent of the sovereign country.

11.3.2. Consistent with international law, the US recognizes sea claims up to 12NMs. Diplomatic constraints and/or a lack of diplomatic clearances usually result in missions operating in international airspace. Therefore, it is imperative sufficient information be provided far enough in advance to allow compliance with FCG requirements established by the countries concerned. The US does not normally recognize territorial claims beyond 12NMs; however, specific guidance from certain US authorities may establish limits, which differ from the standard.

11.3.3. Flight Information Region (FIR). A FIR is an area of airspace within which flight information and related services are provided. An FIR does not reflect international borders or sovereign airspace. Aircraft may operate within an established FIR without approval of the adjacent country, provided the PIC avoids flight in territorial airspace.

11.3.4. Aircrews on a flight plan route, which takes them from international airspace into territorial airspace, for which approved aircraft clearances were obtained, should not amend entry point(s).

11.3.5. Violations of foreign sovereignty result from unauthorized or improper entry or departure of aircraft. Aircrews should not enter into territorial airspace for which a clearance has not been duly requested and granted through diplomatic channels.

11.3.6. ATC agencies are not vested with authority to grant diplomatic clearances for penetration of sovereign airspace where prior clearance is required from the respective country. Aircraft clearances are obtained through diplomatic channels only.

11.3.7. In the event ATC agency challenges the validity of a flight routing or attempts to negate existing clearances, PICs must evaluate the circumstances. The normal response will be to attempt to advise the ATC agency that the aircraft will continue to planned destination, as cleared in international airspace. The key phrase is "in international airspace." Safety of flight is paramount in determining mission continuation. Under no circumstances should aircrews construe a clearance, which routes their mission over sovereign airspace, which was not approved through diplomatic channels before mission departure, as being valid authorization.

11.3.8. Aircrews operating missions requiring unique or specially developed routing will normally be briefed at home station, onload station, and/or by the last C2 facility transited before performing the critical portion of the mission.

11.3.9. Aircrews (except on weather reconnaissance missions) normally are not tasked to and will not fly "due regard" routings unless coordinated with the appropriate MAJCOM C2 and specifically directed in the mission FRAG. The "due regard" or "operational" option

obligates the military PIC to be their own ATC agency to separate their aircraft from all other air traffic. If operational requirements dictate, PICs may exercise the "due regard" option to protect their aircraft. Aircraft will return to normal air traffic services as soon as practical. Refer to FLIP GP for additional guidance on due regard.

11.4. En route Navigation Procedures.

11.4.1. Navigation Systems Crosscheck.

11.4.1.1. As a minimum, pilots should obtain a navigation system crosscheck every 30 minutes during cruise. Update automatic navigation computers as necessary to ensure the computer present position remains within 5 NM of the actual aircraft position. This update requirement does not apply to malfunctioning automatic DR equipment that is not being used for navigation.

11.4.1.2. For operations in oceanic airspace, follow additional navigation systems crosscheck requirements IAW paragraph **11.5**.

11.4.2. Navigation Charts.

11.4.2.1. Maintain an in-flight chart for all missions which depart the airport traffic area. Use the chart to assist with in-flight navigation.

11.4.2.2. If a revised clearance is received, record and plot the new route of flight on the chart.

11.4.3. Air Traffic Rules.

11.4.3.1. This section provides guidance for aircrews operating worldwide. See chapter 6 of the FLIP General Planning, the Foreign Clearance Guide, FAA Handbook 7610.4, and AFI 11-202 Volume 3 for additional requirements or restrictions.

11.4.3.2. Unless authorized by the controlling agency, aircraft operating in controlled airspace under IFR on all routes published or unpublished, must fly along a direct course between NAVAIDS or fixes defining the route (AFI 11-202 Volume 3). Deviations will only be approved by the controlling agency or when operating in special-use airspace or on Military Training Routes (MTRs).

11.5. Oceanic Flight. Maintaining situational awareness during oceanic flight is essential to the safe conduct of the flight. Situational awareness includes, but is not limited to, positional awareness and accurate fuel updates. This requires due diligence on the part of all aircrew members.

NOTE:
The following information also applies to extended flight in non-radar environments where position reporting is required.

11.5.1. Oceanic Plotting Charts.

11.5.1.1. Prior to flight, plot the oceanic portion of the flight on an appropriate chart. Annotate the chart with the mission number, aircraft commander‘s name, preparer‘s name, and date. If practical, chart may be reused.

11.5.1.2. Obtain a coast out fix prior to, or immediately on entering the Category I Route or over-water segment. Perform a gross error check using available NAVAIDS and annotate the position and time on the chart.

11.5.1.3. When approaching each waypoint on a Category I route, recheck coordinates for the next waypoints.

11.5.1.4. Approximately 10 minutes after passing each oceanic waypoint, record and plot the aircraft position and time on the chart, and ensure compliance with courses and ETA tolerances.

11.5.1.5. If a revised clearance is received, record and plot the new route of flight on the chart.

11.5.1.6. Upon return to home station, turn in the charts (copies if reused) and applicable computer flight plans to the squadron or applicable mission planning office. Squadrons will retain the charts, computer flight plans, and associated materials for a minimum of 3 months.

11.5.2. Inertial Navigation System.

11.5.2.1. In-Flight, use all available NAVAIDS to monitor INS performance. Immediately report malfunctions or any loss of navigation capability, which degrades centerline accuracy to the controlling ARTCC. Use the following procedures for flight progress:

11.5.2.2. Steering should be through FMS pilot‘s steering source-autopilot tie-in except when conducting AR.

11.5.2.3. At intervals not to exceed 30 minutes compare present position coordinates for each INU (pure and GPS-mixed positions).

11.5.2.4. Should one or both INUs become inoperative or INU positions noticeably separate determine the most accurate navigation system using all available NAVAIDS (i.e. MAJCOM-approved GPS). Utilize steering solution of INU determined to be the most accurate.

11.5.3. Differences Between Navigation Systems. When there is a difference between the INUs and GPS systems, normally two of the three will be in close proximity. This will help to determine which navigation system is becoming inaccurate. When available, check position using available ground NAVAIDS. Comparing the doppler groundspeed (if available) with the groundspeed derived from each system may also provide an indication of a malfunctioning system. If divergence has been gradual, it should have been determined which INU is accurate, then follow one unit inoperative procedure. If divergence has been sudden, check groundspeed function, as abnormal readouts would indicate a faulty INU. If unable to determine which INS unit is in error, follow two units inoperative procedure.

11.5.3.1. One INU unit inoperative:

11.5.3.1.1. Advise ARTCC.

11.5.3.1.2. Plot position on navigation chart every 30 minutes.

11.5.3.1.3. Check the accuracy of remaining INU, using all available NAVAIDS (VOR/DME, GPS, and radar).

11.5.3.2. Two units inoperative:

11.5.3.2.1. Advise ARTCC.

11.5.3.2.2. Crosscheck system heading with mission plan at waypoint or every 30 minutes.

11.5.3.2.3. Verify last recorded position on chart.

11.5.3.2.4. Use computer flight plan as guide.

11.5.3.2.5. Use ADF, VOR/DME, and ground map radar to update positions.

11.5.3.2.6. If desired and other methods fail, try to obtain an HF DF fix. This service can be requested through the regular ARTCC frequencies.

11.6. Reduced Vertical Separation Minimum (RVSM). Airspace where RVSM is applied is considered special qualification airspace. See FLIP GP for aircraft equipment requirements. Both the operator and the specific aircraft must be approved for operations in these areas. Always refer to the appropriate Area Planning (AP) publication for specific theater RVSM requirements.

11.6.1. Operations in RVSM airspace. In addition to the requirements established in the applicable AP publication, always comply with the following when operating in RVSM airspace:

11.6.1.1. Both primary altimeters, the autopilot, the altitude advisory system, and the transponder, must be fully operational. Request a new clearance to avoid this airspace should any of this equipment fail.

11.6.1.2. Engage the autopilot during level cruise, except when circumstances such as the need to re-trim the aircraft or turbulence require disengagement.

11.6.1.3. Crosscheck the altimeters before or immediately upon coast out. Record readings of both altimeters.

11.6.1.4. Continuously crosscheck the primary altimeters to ensure they agree ± 200 feet.

11.6.1.5. Limit climb and descent rates to 1,000 feet per minute when operating near other aircraft to reduce potential TCAS advisories.

11.6.1.6. Immediately notify ATC if any of the required equipment fails after entry into RVSM airspace and coordinate a plan of action.

11.6.1.7. Document in the aircraft forms malfunctions or failures of RVSM required equipment, including the failure of this equipment to meet RVSM tolerances.

11.6.1.8. In the North Atlantic Region, Minimum Navigation Performance Specification (MNPS) airspace is a subdivision of RVSM airspace. Refer to FLIP AP/2 and paragraph **11.5** for detailed requirements when operating in MNPS airspace.

11.7. Minimum Navigation Performance Specification (MNPS) Operations.

11.7.1. Operations within the North Atlantic area‘s MNPS airspace, Canadian MNPS, or selected Pacific routes are designed for INS-auto-pilot coupled operation. (See FLIP AP/2, chapter 5 and AFI 11-202, Volume 3, *General Flight Rules*). When not engaged in AR operations, aircrews will adhere to these procedures. Comply with FLIP for operations in North Atlantic Minimum Navigation Performance Specification Airspace, and US West Coast to Hawaii Route System Procedures.

11.7.2. Malfunctioning equipment that reduces the aircrew‘s capability to comply with MNPS, whether occurring prior to, or within MNPS airspace, will immediately be reported to the controlling agency and subsequent agencies throughout the route of flight. Prior to airspace entry, aircrews will return to the nearest maintenance repair facility unless the aircraft has a minimum of two operable and correctly functioning INUs, unless specifically cleared to proceed along original, or revised routing by the controlling agency. If subsequent failures occur, advise ARTCC, comply with track restrictions, and use all means available (HF DR, dead reckoning, etc) to ensure navigation accuracy.

11.7.3. When flying in MNPS airspace, exercise special caution to ensure the coordinates of the assigned track and associated landfall and domestic routings are fully understood and correctly inserted into the automatic DR navigation system with appropriate cross-checks. If at any time the route (re-routing, if appropriate) is in doubt, check the details with ARTCC facility.

11.7.4. When flying in MNPS airspace, crews will utilize Strategic Lateral Offset Procedures (SLOP) to the max extent possible. Refer to the MNPS Manual and AFI 11-217 for further information on SLOP.

11.8. Required Navigation Performance (RNP) Airspace. Airspace where RNP is applied is considered special qualification airspace and can be determined by referencing the applicable theater AP publication. The PIC is responsible for a thorough review of the aircraft forms and maintenance logs to ascertain the status of RNP equipment. During flight, immediately notify ATC if any of the required equipment fails after entry into RNP airspace and coordinate a plan of action. Document in the aircraft forms, malfunctions or failures of RNP required equipment, including the failure of this equipment to meet RNP tolerances.

11.8.1. RNP-10. Compliance includes navigation accuracy within 10NM of actual position 95% of the time. KC-135 aircraft with properly functioning steering solutions may operate in RNP-10 airspace without time limitations. If the capability to update the inertial navigation solution with the GPS is lost, or if the receiver autonomous integrity monitoring (RAIM) is lost, the aircraft is limited to 6.2 hours of operation in RNP-10 airspace after the GPS or RAIM is degraded.

11.8.1.1. At least two long range navigation systems certified for RNP-10 must be operational at the oceanic entry point. Periodic crosschecks will be accomplished to identify navigation errors and prevent inadvertent deviation from ATC-cleared routes. Advise ATC of the deterioration or failure of navigation equipment below navigation performance requirements and coordinate appropriate actions.

11.8.2. Basic Area Navigation (BRNAV). The KC-135 is approved for BRNAV operations. BRNAV is defined as RNAV with an accuracy that meets RNP-5 for operations under IFR in that European airspace designated for BRNAV/RNP-5 operations. When operating in

BRNAV airspace, aircrews will immediately notify ATC if any of the required equipment fails, or is unable to meet BRNAV tolerances. Document in the aircraft forms malfunctions or failures of RNP required equipment including the failure of this equipment to meet BRNAV tolerances.

11.9. FM Immunity (FMI) Operations in Europe. ICAO Europe mandates VHF navigation immunity standards from FM radio broadcast interference. The most likely characteristic of FM navigation interference is desensitized deflection of the course deviation indicator while using VOR navigation signals or on an ILS/LOC approach. Prior to deploying to the European Theater, aircrews will review and be familiar with this section, and the FMI section of the JCS NOTAM webpage.

11.9.1. Aircraft equipped with dual FMI VHF navigation receivers are considered fully compliant and will follow normal procedures. If one of the two FMI receivers fails in-flight the crew may continue the mission using single FMI receiver procedures below.

11.9.1.1. Wings/Groups will ensure aircraft FMI status is recorded in GDSS/C2IPS remarks. Remarks will state "Tail #xx-xxx is FM immune", "Tail #xx-xxx has single FM immune receiver", or "Tail #xx-xxx is non-FM immune".

11.9.1.1.1. "FM immune" indicates operations normal.

11.9.1.1.2. "Single FM immune receiver" indicates circumnavigation is required of airspace requiring 2 FM immune receivers or as outlined in paragraph **11.9.3** below.

11.9.1.1.3. "Non-FM immune" indicates circumnavigation of countries not providing exemptions or as outlined in paragraph **11.9.4** below.

11.9.2. Some countries will post their FMI national information in FLIP or NOTAMs listed by nation and/or regional prohibitions and restrictions. For countries that do not post information that permits non-FMI use, assume FMI-equipped VOR/ILS is required. If an airfield is designated in FLIP or NOTAMs as using the generic method of analysis and no interference has been identified, the crew may then operate non-FMI receivers for departure, approach and landing. The generic method of analysis is defined as the host nation conducting analysis of the FM spectrum and publishing any noted interference.

11.9.3. Single-FMI receiver mission planning and operations. Do not use the non-FMI receiver as the primary flight navigation for IFR navigation in airspace requiring FM immune receivers. Both pilots will configure their displays with the FMI receiver information for departure and approach procedures. If the single FMI receiver fails, revert to non-FMI procedures outlined in paragraph 11.10.4. below. Aircrews will report FMI status to command and control element upon initial contact. Standardized equipment codes for DD1801 block 10 can be found at: **https://www.amc.af.mil/a3/a3v/docs/publication_77.doc**.

11.9.3.1. Single-FMI receiver departure planning and procedures. Aircrews will not fly departure procedures which require the cross-tuning of a second VOR. If the host nation has provided an exemption, a single FMI receiver on board is sufficient to be considered FMI compliant. If an aircraft normally carries two VOR/ILS receivers, but is equipped with only one FMI receiver and the host nation has not published an exemption for a single FMI receiver, circumnavigate that airspace or proceed as a non-FMI aircraft if

allowed by the host nation. Review departure alternate procedures when departing an FMI required field and file a destination alternate when filing to an FMI required destination, regardless of weather requirements. The alternate must meet approach requirements for the equipment installed on the aircraft and normal weather requirements for alternate designation.

11.9.3.2. Single-FMI receiver en route planning and procedures. Navigation may be accomplished via normal procedures using the FMI receiver. Crews will pay special attention to fuel requirements keeping FMI, weather, and approach availability in mind.

11.9.3.3. Single-FMI receiver arrival planning and procedures. Fly an ILS approach where a PAR is not available. An ILS approach is restricted to localizer minimums. TACAN, ASR, GPS, MLS and visual approaches remain valid alternate approaches if the aircraft is appropriately equipped. To fly a night visual approach, crews must obtain radar vectoring for a straight in approach to a runway equipped with VASI/PAPI guidance. Aircrews are reminded of the requirement to review appropriate terrain charts prior to descent into unfamiliar areas to ensure situational awareness of obstructions. This requirement becomes increasingly critical and difficult to accomplish when flying radar vectors to a visual approach. Aircrews will not fly arrival or approach procedures which require the cross-tuning of a second VOR. The aircraft must possess the equipment necessary to fly the published missed approach procedure or the crew must coordinate alternate missed approach procedures with ATC. If stated in FMI NOTAMs or FLIP AP/2, host countries may require the crew to declare FMI status to approach control. Clearance for the approach does not authorize use of non-FMI receivers at airfields not labeled "generic method of analysis" in FLIP/NOTAMs.

11.9.4. Non-FMI receiver mission planning and operations. Do not use the non-FMI receivers as the primary flight navigation reference during IFR flight in airspace requiring FM immune receivers. Standardized equipment codes for DD1801 block 10 can be found at: **https://www.amc.af.mil/a3/a3v/docs/publication_77.doc**.

11.9.4.1. Non-FMI receiver departure planning and procedures. If host nations recognize operational air traffic (OAT), be prepared to file OAT rather than general air traffic (GAT), unless host nations have published specific FMI exemptions. Review departure alternate procedures when departing an FMI required field and file a destination alternate when filing to an FMI required destination, regardless of weather requirements. The alternate must meet approach requirements for the equipment installed on the aircraft and normal weather requirements for alternate designation.

11.9.4.2. Non-FMI receiver en route planning and procedures. If required by a host nation, as stated in FMI NOTAMs or FLIP AP/2, aircrew will announce FMI status upon check-in with ATC controllers. Navigation workarounds include BRNAV certification and TACAN-to-TACAN navigation.

11.9.4.3. Non-FMI receiver arrival planning and procedures. Fly a PAR approach if available. The pilot may fly a VOR/ILS precision approach only when FLIP/NOTAMs labels the field "generic method of analysis". At fields not labeled "generic method of analysis", clearance for the approach does not authorize use of non-FMI receivers. Do not execute an approach at an airfield with known or suspected interference unless in an extreme emergency. Terminate the approach if interference is reported, suspected, or

encountered at a field previously noted to be free of FM interference by the generic method of analysis. TACAN, ASR, GPS, MLS and visual approaches remain valid alternate approaches available to the crew if the aircraft is appropriately equipped. The aircraft must possess the equipment necessary to fly the published missed approach procedure or the crew must coordinate alternate missed approach procedures with ATC. To fly a night visual approach, crews must obtain radar vectoring for a straight in approach to a runway equipped with VASI/PAPI guidance. Aircrews are reminded of the requirement to review appropriate terrain charts prior to descent into unfamiliar areas to ensure situational awareness of obstructions. This requirement becomes increasingly critical and difficult to accomplish when flying radar vectors to a visual approach. Aircrews will report FMI status to command and control element upon initial contact.

11.9.5. Emergency Procedures. During an emergency, the crew may only use a non-FMI receiver as a last resort to facilitate a safe landing. Fly a precision approach (PAR or FMI ILS/LOC) as primary, non-precision approach (weather permitting), or visual approach (weather permitting) if unable to proceed to divert base. If possible, divert prior to using a non-FMI receiver for approaches in IMC conditions.

11.9.6. Formation. The lead aircraft should be FMI-compliant or the entire cell will follow non-FMI procedures outlined in paragraph 5. Upon arrival at the cell formation termination or break-up point of FMI compliant formation, any non-compliant cell aircraft will proceed via non-FMI procedures outlined in paragraph **11.9.4**. If cell breakup is ATC directed, non-FMI aircraft will announce status to ATC and follow their directions.

Chapter 12

AIRCREW MAINTENANCE SUPPORT PROCEDURES

12.1. General. This chapter contains aircrew procedures not contained in the flight manual, other portions of this AFI, or other publications.

12.2. Responsibilities. Aircrews may assist the normal maintenance function when critical contingency tasking dictate their use, provided this action does not impact crew duty and crew rest limits specified in **Chapter 3** of this AFI.

12.3. Authority to Clear a Red X. Pilots are not authorized to clear a Red X. If a situation is encountered where the aircraft is on a Red X and qualified maintenance personnel are not available to clear it, the PIC may obtain authorization to clear the Red X from the home station MXG/CC or designated representative, in accordance with T.O. 00-20-1.

12.4. Aircraft Servicing and Ground Operations. Aircrews are normally not required to service the aircraft, however, aircrew members current in aircraft servicing (G190) may augment qualified refueling supervisors. The aircraft servicing course does not qualify crews to perform maintenance tasks. Aircrew members are not authorized to serve as refueling supervisors, only qualified transient alert and maintenance personnel may serve as refueling supervisors.

12.4.1. Do not refuel with JP-8+100 while transiting airfields with JP-8+100 capabilities. AMC aircraft are not allowed to operate on JP-8+100, except in emergency conditions. All JP-8+100 locations are required to maintain a clean JP-8 capability to support transient aircraft. If inadvertent refueling with JP-8+100 occurs comply with the following:

12.4.1.1. Make an AFTO Form 781A entry stating ―Caution: Aircraft refueled using JP-8+100, preventative measures must be taken when de-fueling."

12.4.1.2. De-fuel the aircraft prior to next flight.

12.4.2. Concurrent Ground Operations. Concurrent ground operations (simultaneous refueling or defueling while maintenance operations are being performed) will be in accordance with TO 00-25-172 and applicable KC-135 2-2 series maintenance technical orders for approved concurrent maintenance actions.

12.4.2.1. Movement into or within the safe area must be under control of the chief servicing supervisor (CSS). Individuals must properly ground themselves before boarding the aircraft or handling fuel-servicing equipment.

12.5. Aircraft Recovery Away from Main Operating Base (MOB). When an aircraft will land at a base other than the MOB, a crew chief should accompany the aircraft. The PIC is responsible for ensuring the aircraft is turned to meet subsequent mission taskings.

12.5.1. The PIC is responsible for the recovery items including:

12.5.1.1. Parking and receiving.

12.5.1.2. Aircraft servicing, including Aircraft Ground Equipment (AGE) usage.

12.5.1.3. Supervision of minor maintenance within local capability.

12.5.1.4. Minor configuration changes to meet mission tasking.

12.5.1.5. Securing the aircraft before entering crew rest.

12.5.1.6. Coordinating aircraft security requirements.

12.5.1.7. Documenting AFTO 781-series forms.

12.5.2. Aircrews are not qualified to accomplish the required ground inspections. In those instances where maintenance personnel are not available, the aircrew will enter a red dash symbol in the AFTO Form 781H **Aerospace Vehicle Flight Status and Maintenance Document**, updating current status and enter a red dash symbol and a discrepancy that reflects that the applicable maintenance inspection (i.e. preflight, thru-flight, basic post-flight) is overdue.

12.5.3. Lightning strike. Dash-6 inspections following a lightning strike must be performed by maintenance personnel trained in KC-135 maintenance.

12.6. Engine Monitoring. Crews will perform a manual TEMS Data collection as required by maintenance procedures or failure of the TEMS monitor system. Failure of the TEMS monitor system will be annotated in the AFTO 781.

12.6.1. With TCTO 1608, a manual TEMS Data collection will be accomplished whenever the Flight Data Recorder (FDR) is inoperative (FDR circuit breaker pulled/popped, and/or FDR fail light on).

Chapter 13

CARGO AND PASSENGER HANDLING PROCEDURES

13.1. General. The BO coordinates on/offloading with air terminal operations or shipping agencies; plans loads; and supervises on/offloading operations. Performs pre/postflight checks of aircraft and systems, and computes aircraft weight and balance, ensures safety and comfort of passengers and troops, and security of cargo, mail, and baggage during flight.

13.2. Responsibilities Aircraft Loading

13.2.1. AMC Designated Stations.

13.2.1.1. Aerial port personnel are responsible for selecting cargo and mail for airlift, promptly completing documentation, preparation of cargo for air shipment, load planning (as required), computing load distribution and moving cargo to and from the aircraft to meet scheduled departure. They will advise the BO of destination, size, weight, and types of cargo (classified, hazardous, etc.) before starting loading operations to permit proper positioning. They will also coordinate traffic activities affecting on/off loading activity, and assign sufficient airfreight loading personnel for cargo handling. Aerial port personnel are responsible for safe positioning of material handling equipment (MHE) and cargo to or from the aircraft cargo door. Under the supervision of the BO, aerial port personnel prepare the aircraft for on/off loading, stow loading/tiedown equipment if the aircraft is not to be reloaded, physically on/off load the aircraft and secure/remove tiedown devices as required.

13.2.1.2. The BO is responsible for aircraft preflight; load planning preparation of weight and balance documentation; completing all required load computations; certifying load plans, operating aircraft equipment; supervising and directing on/off loading operations; and cargo tie down. They coordinate with the loading crew supervisor to verify cargo against load plan and manifests. The BO supervises loading operations and is responsible for safe movement of cargo into and out of the aircraft. The BO will notify the PIC, C2, or terminal operations officer if loading personnel are injured or cargo, aircraft equipment, or aircraft structure is damaged during on/offloading. The BO will brief the PIC on any hazardous cargo and cargo jettison capability prior to engine start.

13.2.1.2.1. Responsibility for Customs Procedures. Unless otherwise directed, use the Foreign Clearance Guide, the AMC Aircrew Border Clearance Guide, and **Chapter 6** of this directive for specific inbound/outbound customs requirements.

13.2.1.3. Loads planned by qualified load planners will normally be accepted by the BO and loaded aboard the aircraft as planned, unless the load, or any portion of it, will compromise flight safety or does not comply with applicable aircraft technical orders or USAF/MAJCOM publications. If cargo is refused or rearranged for these reasons, forward all applicable information, including a copy of the load plan, to HQ AMC/A3VK through Stan/Eval channels. AMC units will include AMC Form 54, Aircraft Commander‘s Report On Services/Facilities.

EXCEPTION:

The BO may deviate from load plans only to facilitate ease of on/offloading of cargo and to alleviate unnecessary aircraft reconfiguration. The BO must take into consideration the next station‘s cargo configuration requirements and will ensure the aircraft is in proper weight and balance limits.

13.2.1.4. The BO is the on-scene expert for load planning and accepting cargo for airlift. Some loads are not specifically detailed in applicable directives and may require the BO to seek advice of other personnel (i.e., available boom operators, squadron, group, wing or HQ AMC/A3VK evaluators) or use their best judgment, based on training, experience, and knowledge, to determine the safest and most efficient method of cargo loading.

13.2.1.4.1. Non-standard cargo/equipment not contained in the aircraft loading manual (TO 1C-135-9) may require certification for air shipment. The shipper will provide a copy of the certification to the BO prior to loading. If the certification letter with loading instructions/requirements is not provided to the BO, the cargo will not be loaded. Contact Air Transportability Test Loading Agency (ATTLA) or ASC/ENFC at Wright Patterson AFB, OH, voicemail (937) 255-2330/2547 or HQ AMC/A3V for questions concerning cargo certification.

13.2.1.4.2. Maintenance is responsible for the upload and configuration of (daily) training mission equipment and cargo roller systems. Maintenance is responsible for uploading and assisting Boom operators with configuration of additional equipment needed per AFI 11-2KC-135 V3, Addenda A. Boom operators must ensure all equipment has been properly configured/secured and accomplish a cargo roller system preflight (if installed) prior to departure. Aircraft equipment must be inventoried and configured IAW T.O. 1C-135-21, Equipment Inventory List All -135 Series Aircraft, AFI 11-2KC-135 Volume 3, C/KC-135 Aircraft Configuration, Addenda A and T.O. 1C-135-9, Cargo Loading Manual.

13.2.1.4.3. Sufficient cargo handling and securing equipment must be on board each -135 to properly secure all planned cargo items from home station and items listed in departure and pre-departure messages.

13.2.2. At locations without AMC air terminal or traffic personnel, the shipper assumes responsibilities as described in paragraph **13.2.1.1** and provides sufficient qualified personnel and MHE for on/offloading. Boom operator‘s responsibilities and authority are the same as described in paragraph **13.2.1.2** and **13.2.1.3**.

13.2.3. During Joint Airborne Air Transportability Training (JA/ATT), Special Assignment Airlift Mission (SAAM), USAF mobility, and contingency missions, the BO can accept DD2133, **Airlift Inspection Record, Joint**, as a valid pre-inspection of equipment being offered for air shipment. This form, validated by two joint inspection signatures (user and transporting force), may be used in lieu of the applicable portions of the T.O. 1C-135-9. The DD2133 will not be used to document preparation of hazardous materials. This will be accomplished using the Shipper‘s Declaration for Dangerous Goods.

13.3. Emergency Exits and Safety Aisles.

13.3.1. Passengers, troops and crew must have ready access to emergency exits. Load aircraft in such a manner that at least one unobstructed safety aisle in the cargo compartment

allows movement from the crew compartment to the aft escape hatch and access to cargo for fire fighting.

NOTE:
All passenger hand-carried items must be of a size to fit under the seat and must not obstruct the safety aisle(s). Any items that do not fit under a seat or obstruct an aisle way, will be stowed with checked baggage and secured for flight.

13.3.2. When passengers are seated in extended canvas troop seats, the BO will ensure there is sufficient space between the cargo and the seats to permit passenger leg room.

13.3.3. Ensure only adult, English-speaking passengers are seated next to emergency exits. Do not seat any passenger with infants, children under 15 years old, or physically challenged persons, in seats adjacent to emergency exits. Boom operators will demonstrate emergency hatch operation to persons seated next to emergency exits.

13.3.4. Aisle requirement. A safety aisle is defined as a minimum 14 inch-wide space extending from the aircraft fuselage or the edge of the extended canvas troop seat to the vertical stacking line of the cargo and is sufficient for an individual to proceed through. If, in the case of centerline cargo loading with two aisles and sufficient aisle space cannot be maintained, passengers or cargo must be downloaded according to relative shipping priority. Tie-down devices are permitted, but they must not obstruct the opening or installation of hatches and operation of emergency gear or flap extension ports.

13.3.4.1. When carrying palletized cargo, the right overwing hatch may be blocked. Ensure the hatch is secured IAW applicable flight manual prior to loading cargo and all other exits are clear and operable.

13.4. Pre-Mission Duties.

13.4.1. Cargo Missions.

13.4.1.1. The BO, in coordination with aerial port personnel, establishes loading times. Loading times differing from the normal pre-departure sequence of events will be established, with PIC coordination, before the BO enters crew rest. Loading time is governed by the type of load and complexity of loading procedures (bulk, palletized, etc.) not by port saturation or management of aerial port workload levels. When reporting for duty, the BO checks in with the air terminal operation center (ATOC) or other designated location to obtain load breakdown and assist in load planning as required. The BO will ensure a fully stocked and serviceable hazardous spill kit or Protective Clothing Kit (PCK) is onboard prior to cargo upload.

13.4.1.1.1. Duty Boom Operator Operations. Duty boom operators can be used as a means of flow control at stations with limited aerial port personnel and/or when units are deployed as part of an Expeditionary Air Refueling Squadron (EARS) or tactical/contingency operation. They do not relieve the primary aircrew BO of aircraft preflight and cargo security check requirements. Duty boom operators ensure items loaded on aircraft do not exceed aircraft limitations and adequate restraint is applied to cargo to prevent movement. Duty boom operators are required to restrain cargo for flight limits. They will accomplish a basic cargo loading preflight and all appropriate loading preparation checklists prior to conducting loading operations and

will ensure the flight crew receives sufficient copies of all required cargo load documentation. They will ensure the oncoming flight BO receives all required briefings on the aircraft load to include hazardous materials briefings. Boom operators performing this function must have crew rest prior to performance of these duties.

13.4.1.2. Proper cargo documentation must accompany each load. A consolidated statement (manifest) will be delivered to the aircraft prior to departure unless one is not available due to a lack or failure of the manifest processing equipment. In this case, a cargo listing or floppy disks containing manifest information must accompany the load.

13.4.1.3. Make every effort to exchange tiedown equipment on a one-for-one basis. If this is not possible, annotate the AF Form 4069, **Tiedown Equipment Checklist**. At non-AMC stations, 463L pallets will normally be exchanged on a one-for-one basis.

13.4.2. Passenger Missions. Maximize seat availability on all missions. The maximum number of passengers may be limited by the aircrew complement (see **Table 3.1**), amount of life support equipment, operable seats with seat belts, baggage securing capabilities, aircraft configuration and latrine capacity vs. personnel loading (see **Table 6.4**), as well as a thorough assessment of ORM based on mission requirements. Passengers will be seated as far forward in the passenger compartment as possible. Seating aft of the aft escape hatch is prohibited. PIC is the final authority for seat release.

13.4.2.1. Passenger Missions Without Dedicated Passenger Monitor. Up to 10 passengers of any category and 3 dedicated crew chiefs may be carried. Normally the boom operator will occupy the flight deck position for takeoff and landing. If the BO is seated on the flight deck, passengers will be seated as far forward in the passenger compartment as practical during takeoff and landing. The PIC may direct the BO to occupy a cargo/passenger compartment seat during takeoff and landing if deemed necessary. Prior to conducting air refueling, the boom operator will brief all personnel to remain seated with their seat-belt fastened during the air refueling.

13.4.2.2. Manifesting. Passenger service or base operations personnel manifest passengers at locations with an AMC passenger processing activity. Sufficient copies of the passenger manifest must be given to the BO prior to passenger boarding.

13.4.2.3. At locations without an AMC passenger processing activity it will be necessary for crews to perform passenger service functions at stations not having this capability. These functions include manifesting, anti-hijack processing (IAW AFI 31-207), and ensuring visa/passport requirements are met. Do not hesitate to contact 618 TACC/XOGX, Aerial Port Control Center (APCC); DSN 779-0350/0355, commercial 618-229-0350/0355, if any questions arise such as to who may travel to specific locations or passport/visa requirements. Aircraft operating within other MAJCOMs which have operational command and control over that aircraft will contact the appropriate C2 for specific details. File a copy of the passenger manifest (DD2131) with the flight plan. If not filed with the flight plan, annotate the location of the manifest on the flight plan IAW AFI 11-202V3.

13.4.2.4. The PIC and BO are responsible to ensure all passengers are properly manifested.

13.4.2.5. Brief passengers using the passenger briefing checklist unless the passenger briefing video has been shown. Passenger monitors will brief all passengers on emergency exits upon arrival at the aircraft. The passenger video does not include required individual briefings for personnel seated next to emergency exit hatches or mission specific information. A crew member must brief these items separately.

13.4.2.5.1. Place one passenger information guide at each airline type seat and one for every 5 seating positions in the case of side facing troop seats. Passenger information guides may be obtained electronically at **https://private.amc.af.mil/a3/a3v/docs/publication_75.pdf** from the AMC Stan/Eval Publications website. Order printed copies of the Air Force Visual Aid (AFVA) 11-226 at the Air Force Publications website **http://www.e-publishing.af.mil/mastercatalog/master_catalog.asp**.

13.4.2.6. A passenger service representative or crew member will assist passengers at the bottom of the steps, and the BO will assist in seating passengers. Make every effort to seat families together to minimize confusion during an emergency egress. DVs, passengers requiring assistance and families should be boarded first.

13.4.2.6.1. If aircraft auxiliary power unit is in use, provide hearing protection to passengers prior to boarding the aircraft.

13.4.2.7. Use caution when on/offloading passengers without air stairs. The PIC is the final authority on whether passengers/troops will be on/offloaded when air stairs are unavailable.

13.4.2.8. When children under the age of two are accepted as passengers, their sponsor has the option to either hold the child or place them in a Department of Transportation-approved infant car seats (ICS). Although the use of ICS for children processed through AMC-owned or controlled terminals (including gateways) is no longer mandatory, all passengers (duty and space A), regardless of age, are required to be assigned their own seat. This policy provides an infant and their sponsor with a dedicated seat allowing the use of an ICS seat at the sponsor‘s discretion; this mirrors current FAA (commercial) standards. The FAA and USAF have banned the use of booster seats, harnesses, and vest child restraints.

13.4.2.8.1. Passengers may hand-carry ICS. If used, these seats will be secured to a seat using the seat belt. Adults will not hold infant seats during any phase of flight.

13.4.2.8.2. If the mission aircraft is equipped with aft facing "airline style” seats, secure ICS in the same manner as in an automobile. However, if the aircraft is configured with side-facing seats, aircrew must ensure the ICS is adequately secured. The design of the sidewall seatbelt makes it difficult to remove enough slack to secure the ICS. Crewmembers may need to reroute the seatbelt by crossing the belt, between the sidewall and the seatback webbing, routing the belt back through the webbing and through the securing point on the ICS. When removing slack from the seatbelt ensure the buckle remains on one side or the other so that it can be easily accessed for release. The PIC is the final authority for determining whether the ICS is adequately secured.

13.4.2.9. Download the baggage of no-show passengers and those removed from a flight. In the case of SAAM or exercise missions at non-AMC locations, coordinate with TALCE or deploying unit CC to decide if downloading of baggage is necessary.

13.4.2.10. Aircrew will not except unaccompanied baggage except in the following circumstances:

13.4.2.10.1. Baggage has been processed through Traffic Management Office (TMO), or Installation Transportation Office (ITO) and arrives to the aircraft as freight.

13.4.2.10.2. Baggage has been processed/manifested through AMC Passenger Terminal as RUSH baggage.

13.4.2.11. RUSH baggage movement will be accomplished IAW AMCI 24-101V15. The BO will ensure ATOC provides a copy of the AMC Form 70, RUSH Baggage Manifest, for the shipment of RUSH baggage.

13.4.2.12. Decisions regarding eligibility or acceptance of a less abled passenger for a flight must be determined at the lowest level possible. Problems concerning eligibility or acceptance that cannot be resolved locally must be reported (circumstances, chronology, names, units, etc.) to HQ AMC/A4T. For time-sensitive problems, telephone HQ AMC/A4TP DSN 779-4592 or 618 TACC/APCC. PACAF/USAFE crews contact C2 agency.

13.4.3. Passenger Loading With A/M 135 Cargo Loading Roller System Installed.

Table 13.1. Seat Release without MP-2 Passenger Seat Pallet.

Pallets of Cargo	Seats to Release
6	0
5	10
4	15
3	20
2	25
0-1	30

Table 13.2. Seat Release with MP-2 Passenger Seat Pallet Installed.

Pallets of Cargo	Seat Release with all Pallets above 50”	Seat Release with one or more Pallets 50” or less
5	N/A	10
4	10	15
3	20	20

Pallets of Cargo	Seat Release with all Pallets above 50”	Seat Release with one or more Pallets 50” or less
2	25	25
0-1	30	30

NOTE:
A troop seat is available at STA 1140 for crewmembers and crew chiefs.

13.4.3.1. When securing removed roller trays, do not over-tighten cargo straps as this may cause warping. Prior to moving any pallet, pallet stops and roller tray assemblies must be reinstalled as required. Refer to T.O. 1C-135-9.

13.4.3.2. Secure passenger baggage on top of any cargo pallet but do not exceed the 65-inch height limit. Do not wedge or secure baggage between pallets or between the aircraft fuselage and the adjacent RH side of pallets. If passenger baggage is not pre palletized, weights must be provided by passenger service or ATOC prior to loading.

13.4.3.3. Duty passenger baggage requirements and the capability to safely stow all baggage and maintain aisle space to all emergency exits will be considered in overall planning for maximum seating arrangements when using the A/M 135 roller system for deployment/redeployment. Except for unit deployment/redeployment, use the following guidance for passenger seating requirements.

13.4.3.3.1. Civilian passengers will be seated on the seat pallet in pallet position number one (if installed) or in LH and RH troop seats adjacent to empty pallet positions. They will not be seated in troop seats adjacent to cargo pallets. To enhance egress capability when carrying civilian passengers, troop seats adjacent to cargo pallets will be stowed, if practical. The number of pallets carried will determine seat release.

13.4.3.3.2. The seat pallet will be moved forward one detent (approximately 10 inches) to provide required 30 inch spacing forward of netted or strapped cargo. A sufficient aisle to and from the cockpit must be maintained for egress. Other pallets may be repositioned, and pallet stops and center roller tray assemblies removed IAW 1C-135-9 for passenger comfort and safety. Do not decrease number of passenger for this purpose.

13.5. Passenger Handling.

13.5.1. The BO is key to good passenger relations. The following common sense rules should be observed:

13.5.1.1. Address passengers by proper titles.

13.5.1.2. Avoid arguments and controversial subjects, national or international politics and/or criticism of other personnel or organizations.

13.5.1.3. Offer services or perform duties in a manner indicating a personal interest and willingness to help.

13.5.2. Comments by the BO and the manner in which they are made often determine passenger attitudes about the flight. Always remember that passengers are individuals; address them collectively only when making announcements.

13.5.2.1. Deleted

13.5.3. In-flight Procedures.

13.5.3.1. The BO will brief all passengers to remain seated with their seat belts fastened during air refueling. This briefing will be conducted, as a minimum, in-flight just prior to the BO moving to the boom pod. Except during air refueling, passengers may move about the cabin after reaching cruise altitude; however, judgment must be exercised on the number of passengers allowed out of their seats at any one time. Seated passengers will have seat belts fastened at all times. Discourage passengers from congregating around galley, lavatory and crew bunk areas. Passengers are not allowed to lounge or sleep under or on top of cargo, baggage bins, or baggage secured to the floor.

13.5.3.2. Make frequent checks on cabin temperature, passengers with small children and cleanliness of the cabin and lavatory.

13.5.3.3. Do not allow passengers to tamper with emergency equipment.

13.5.3.4. On long flights, particularly during hours of darkness, use all possible means to make passengers comfortable such as dimming or extinguishing unnecessary compartment lights.

13.5.3.5. Passengers may visit the flight deck or boom pod only when approved by the PIC. Use good judgment when requesting this authority.

13.5.3.6. Passengers will not be permitted access to checked baggage.

13.5.4. Meal Service. The AMC form 148, **Boarding/Pass Ticket,** indicates if a meal was ordered by a passenger.

13.5.4.1. Meals are served at normal hours when practical, based on the local time at point of departure. Avoid waking passengers to offer meals. Ask the PIC about expected flight conditions prior to serving meals.

13.5.4.2. For passengers who ordered a meal, serve meals in the following sequence:

13.5.4.2.1. Small children requiring assistance.

13.5.4.2.2. Distinguished Visitors (DV).

13.5.4.2.3. All other passengers.

13.5.4.3. Use the following procedures for box lunches:

13.5.4.3.1. Ensure each passenger receives the meal ordered by verifying the passenger‘s AMC Form 148.

13.5.4.4. Do not serve liquids or hot food during turbulence.

13.5.4.5. Turn in all meals unfit for consumption to the first in-flight kitchen. If in radio contact with the issuing station, relay aircraft tail number, mission identifier, numbered of spoiled meals (by menu) and issuing organization.

13.5.4.6. When prepared meals have not been furnished to passengers, annotate the individual‘s boarding pass to reflect reimbursement is authorized. Inform passengers they may receive refunds at the next station or the originating or destination terminal.

13.5.4.6.1. Ensure all food items are removed from the aircraft by fleet and returned to the in-flight kitchen if an extended delay occurs. Ensure that a copy of AF Form 129, **Tally In-Out**, is received from fleet to relieve the BO of meal accountability.

13.5.4.7. Complimentary snacks and beverages are authorized on Transportation Working Capital Fund (TWCF) funded missions (including ANG and AFRC flown missions) for passenger consumption only. Complimentary snacks are not authorized on JA/ATT, Joint Chief of Staff (JCS) exercises, or SAAM missions. The squadron or port operations officer will ensure snacks and beverages are placed on board when departing AMC stations. When departing from other stations and no snacks or beverages are placed onboard, the BO may obtain required snacks and beverages from the local in-flight kitchen. Direct the in-flight kitchen to bill the accounting and finance office at the aircraft‘s home station. Record all unused snacks and beverages on AF Form 129 and return to the in-flight kitchen for turn-in credit.

13.6. Not Used.

13.7. En route and Post Flight Duties.

13.7.1. At stations where a crew change is made and loading or offloading is required, the inbound BO is responsible for offloading the aircraft. The outbound BO is responsible for planning and loading the outbound load.

13.7.2. At stops where the primary BO is relieved of cargo unloading, brief relief personnel about passenger and aircraft equipment, any missing items, the location of through cargo, mail and baggage, and any information pertinent to through passengers. Point out cargo requiring special consideration (hazardous material, perishables, etc.). If unable to conduct a face to face briefing, leave written instructions with cargo manifest or local C2.

13.7.3. Assist passengers to deplane. If BLUE BARKS, DVs, COIN ASSIST, or couriers are aboard, the BO will inform the protocol or traffic representative respectively.

13.8. Loaded Weapons. Weapons are considered loaded if a magazine or clip is installed in the weapon. This applies even though the clip or magazine is empty.

13.8.1. Personnel who will engage an enemy force immediately on arrival (actual combat) may carry basic combat loads on their person. Weapons will remain clear with magazines or clips removed until immediately prior to exiting the aircraft. The troop commander will coordinate with the BO prior to directing personnel to load any weapons.

13.8.2. Personnel who will not immediately engage an enemy force will store basic ammunition loads in a centralized location for redistribution on arrival at the objective. Magazines or clips will not be inserted into weapons.

13.9. Weight and Balance.

13.9.1. Accomplish weight and balance according to T.O. 1C-135-5-1, *Basic Weight Check List, Maintenance Data, Loading Data, and Fuel Loading Data*, and Addenda A of this AFI, *C/KC-135 Aircraft Configuration.* The unit possessing the airplane maintains the primary

weight and balance handbook containing the current airplane status and provides a supplemental weight and balance handbook for each airplane. Enclose the supplemental handbook in a wear-resistant binder labeled "Weight and Balance" with the airplane model and complete serial number on the cover or spine.

13.9.2. The pilot will file the original **DD FORM 365-4, Weight and Balance Clearance Form F – Transport/Tactical** at the departure airfield and maintain a physical or electronic copy for the duration of the flight.

13.10. Cargo Validation On/Offloading Procedures and Format. Use the following format when tasked to validate a new loading procedure or when encountering any cargo requiring special or specific on/offloading or tiedown procedures not currently listed in T.O. 1C-135-9. After completion, send through standardization channels to HQ AMC/A3V.

13.10.1. General Loading Data:

13.10.1.1. Nomenclature of item. Give military or civilian name, national stock number (NSN), and a brief description of the item.

13.10.1.2. Dimensions (in inches). Length, width, and height. Rough drawing or picture of the unit, pointing out critical dimensions, projections, overhangs, etc. Include a website address of the manufacturer, if available.

13.10.1.3. Weight (in pounds). Gross weight; individual axle weight; or data plate weight if possible.

13.10.2. Number of loading crew personnel and BOs required to on/offload cargo and their position to observe clearances, if required.

13.10.3. Equipment and Material Requirements. Special equipment and material required to on/offload cargo, (i.e., jacks, pry bars, shoring requirements etc.).

13.10.4. Aircraft Configuration Required.

13.10.5. Preparation of Cargo for Loading. Components that must be removed or reconfigured to on/offload cargo, (i.e., exhaust stacks, etc.).

13.10.6. On/off Loading Procedures.

13.10.7. Location of Tiedown Points.

13.10.8. Comments.

13.11. Emergency Airlift of Personnel: Apply the following procedures to ensure a safe, efficient loading method for the emergency airlift of personnel from areas faced with enemy siege, hostile fire, for humanitarian reasons, or when directed by 618 TACC.

13.11.1. Emergency airlift normally will be accomplished without the use of individual seats or safety belts. The maximum number of personnel who may be airlifted by seating them on a pallet sub-floor in the cargo compartment or cargo floor will vary. Seat personnel in rows facing forward and load in small groups of 8-10 so they may be positioned and restrained by connecting the pre-positioned tie-down straps from the left and right outboard pallet/tie-down rings. Load personal effects/baggage in any safe available position.

13.11.2. The maximum altitude for emergency airlift will not exceed FL 250.

13.12. Rucksacks: The following procedures apply to loading rucksacks.

13.12.1. In all cases, load rucksacks on the same aircraft as the individual.

13.12.2. Rucksacks will not normally fit under seats without obstructing the aisle way, therefore during administrative deployments they must be palletized or loaded in baggage bins.

13.12.3. During tactical deployments, rucksacks not loaded on vehicles will be carried by the individual onto the aircraft. Allocate pallet space on the load plan for loading rucksacks.

13.12.4. Ensure all rucksacks are properly secured and their weight is accounted for on DD Form 365-4 and all load computations.

13.12.5. The following procedures apply to transporting hazardous materials in rucksacks.

13.12.5.1. Personnel will only be permitted to carry their basic combat load or individual issue of hazardous material when they will engage an enemy force immediately upon arrival. Personnel may retain small arms ammunition (cartridge for weapons, DOT 1.4) and nuclear, biological, and chemical equipment as long as it is retained in a carrier (i.e., bandoleers, pouches, bags).

13.12.5.2. Munitions and other hazardous materials placed in rucksacks, field packs, or other authorized containers, removed from their shipping container, must be adequately protected from accidental functioning. All carriers will be consolidated in one central location on the aircraft (as directed by the boom operator) and distributed to personnel after landing. Ensure compliance with AFMAN 24-204.

13.13. Not Used.

13.14. Cargo and Material Handling Equipment (MHE) Issues.

13.14.1. The PIC or BO is responsible for assuring all cargo is properly secured in compliance with T.O. 1C-135-9. Regardless of passenger seating, all cargo and the MP-2 Seat Pallet will be secured using 3G forward restraint criteria. Certain items may require additional restraint based on ASC/ENFC certification.

13.14.1.1. Aeromedical Patient Support Pallets (PSP) require 9G restraints. In order to be in compliance with the 9G forward restraint limitation, PSPs cannot exceed 2000 pounds total weight without requiring supplemental restraint.

13.14.2. Airlifting Hazardous Cargo**.**

13.14.2.1. PICs will comply with AFMAN 24-204, *Preparing Hazardous Materials For Military Air Shipments,* AFJI 11-204, *Operational Procedures For Aircraft Carrying Hazardous Materials*, when carrying hazardous cargo.

13.14.3. When the load consists of palletized netted cargo or is secured with straps, a 30-inch space will be maintained between the cargo and the nearest forward occupied litter or occupied seat. When cargo, either palletized or non-palletized, is secured with chains, the 30-inch spacing is not required.

13.14.3.1. Maintain 30 inch spacing between all litters and cargo on Aeromedical Evacuation (AE) missions, when carrying occupied litters.

13.15. Human Remains. Transport human remains on KC-135 aircraft IAW AMCI 24-101 Vol 11 and AMCI 11-208 guidance.

13.16. Blood and Body Fluid Cleanup.

13.16.1. There may be times when the aircraft requires clean-up of blood or other body fluids during and/or following mission execution. This clean-up is designed to alleviate legitimate health concerns. Blood and body fluids such as vomit and feces may contain disease-causing organisms which can pose a health threat to crewmembers and passengers. To ensure the health of personnel traveling aboard the aircraft and minimize any risk to mission accomplishment, spills must be prevented and/or cleaned properly by aircraft crewmembers or ground personnel. As in-flight duties permit, aircrew members need to address these spills. Medical crew or critical care air transport team members will continue to be responsible for cleaning and disinfection of patient-related spills.

13.16.2. When transporting human remains, the possibility of body fluid spills is minimal. Condensation may occur on transfer cases due to ice inside the container. If there appears to be fluid other than condensation, it needs to be cleaned as follows:

13.16.2.1. If possible, put a barrier (plastic, paper towels, rags) down to minimize aircraft contamination. Dispose of these items IAW paragraph **13.16.2.2**. The recommended method to clean and disinfect the area in-flight is to use the AMC SG/A44-approved blood and body fluid clean up kit to ensure proper personal protection and to prevent the spread of disease.

13.16.2.2. Personnel cleaning the spill will wear the appropriate personal protective equipment included in the clean up kit. Personnel will not use the PCK for blood and body fluid clean up. The PCK contains items for use by aircrew during emergencies aboard aircraft carrying hazardous cargo IAW AFMAN 24-204. At no time will contaminated items be placed in the PCK. The in-flight ventilation system is sufficient to eliminate vapors when the pre-moistened towels are used. If decontaminated in-flight, no further action is necessary. Place an entry into the AFTO Form 781A, **Maintenance Discrepancy and Work Document**, to ensure the kit is replaced. Any disposable items used and any potentially contaminated trash must either be placed in red-biohazard bags located in the clean up kit or in double-thickness bags. These bags must be clearly marked as containing bio-hazards. Wash hands or use the hand sanitizer in the spill kit after cleaning the spill. Contact the nearest military medical treatment facility thru the local command post to arrange disposal of contaminated materials.

13.16.2.3. If a clean up kit is not available and an alternative means of containing the leaking bodily fluids exists, clean the spill by applying paper towels or rags to absorb the fluid, then wipe the area with approved aircraft cleaners or water, then wipe dry. The area still requires decontamination upon landing. Clearly mark the area and, upon landing, contact the local C2 to request assistance and/or equipment required to properly clean the spill.

13.16.3. Any necessary post-flight disinfection will be in accordance with the weapons system-specific tech data and/or T.O. 1-1-691, *Aircraft Weapons System Cleaning and Corrosion Control*. Failure to comply may result in degradation of the aircraft structure. If

required, senior operations and maintenance personnel will decide what additional measures need to be taken to minimize exposure risk.

13.16.3.1. Absorbent materials such as fabric seats may resist disinfection; you should dispose of these materials IAW paragraph **13.15.2.2**. Use water and chlorine bleach to disinfect aircraft items such as nylon seats and cargo straps.

13.16.3.2. The squadron medical technician can order the blood and body fluid clean up kit through their host medical logistics account. The National Stock Number is 6515-01-524-9755. Ensure two kits are onboard the aircraft. Units deploying to an AOR should deploy with additional kits.

Chapter 14

FUEL PLANNING

14.1. General. This chapter outlines KC-135 fuel planning factors. It is designed to assist pilots and planners in planning for KC-135 missions.

14.2. Fuel Requirements. This section augments AFI 11-202V3 fuel requirements.

14.2.1. Authorized Fuel Loads and Sequences. Aircraft will be loaded with fuel according to requirements of T.O. 1C-135-5-3, *Fuel Loading Data*. The OG/CC or equivalent will issue waiver approval. Units may develop standard alternate fuel requirements for local training missions; however, these fuel requirements will not be less than those specified in this volume. ***NOTE***: AMC units will not develop standard alternate fuel requirements.

14.2.2. Required Ramp Fuel. Will consist of all fuel required for mission accomplishment, to include fuel required for engine start, taxi, APU operation, takeoff, enroute, enroute reserve, air refueling, decompression, descent, approach and landing, alternate, transition, holding/minimum landing. Final landing fuel will not be less than 8,800 pounds. (AMC) For AMC unit missions, local or operational, and AMC-gained units on 618 TACC operational missions, if the actual fuel load exceeds the required ramp fuel load by more than 5,000 lbs, defuel the aircraft to the required load. For 618 TACC-directed missions, when there is a conflict between an on-time departure and defueling, the 618 TACC deputy director for operations will determine which takes precedence (OG/CC for AMC local missions).

14.2.2.1. Start Engines, Taxi, APU operation, and Takeoff. A standard planning factor of 2500 lbs of fuel for R/T-model (3000 lbs for D/E-model) is typically used. Fuel planning may be adversely affected with considerable taxi operations or ATC delays.

14.2.2.2. En route Fuel. Fuel from Start of Climb segment at the departure location to Begin Descent Point at destination.

14.2.2.3. Enroute Reserve. 10% of the flight time fuel over the Category 1 route/route segment, not to exceed 1+00 fuel at normal cruise. A Cat 1 route is any route on which the position of the aircraft cannot be accurately determined by the overhead crossing of a radio aid at least once each hour with positive course guidance between such radio aids.

14.2.2.4. Air Refueling Fuel. Scheduled offload.

14.2.2.4.1. KC-135 R/T receiver aircraft. Scheduled offload minus scheduled onload. If scheduled onloads are not completed it may be impossible to complete the mission.

14.2.2.5. Decompression Fuel. Additional fuel may be needed to satisfy oxygen requirements. For flights where the total number of individuals on board the aircraft exceeds the total number of operational flight crew oxygen system stations, ensure there is sufficient fuel on board to allow for a loss of cabin pressurization from any point along the route, an emergency descent to 10,000 feet MSL minimum, and continued flight to the nearest suitable emergency airfield. To compute decompression fuel, examine the intended route of flight and determine the point furthest from a suitable emergency

airfield. From the flight plan determine the amount of fuel remaining on board the aircraft at that point. Compare that fuel remaining value with the amount of fuel that would be required to proceed from that furthest point, at 10,000 ft, to the suitable emergency airfield, execute a descent, approach and landing, and land with 8,800 pounds plus 30 minutes of reserve fuel. Decompression fuel is not cumulative with Enroute Reserve fuel or contingency fuel.

14.2.2.6. Descent, Approach and Landing. Plan an enroute descent whenever possible.

14.2.2.7. Alternate. Select alternate airports meeting the requirements of AFI 11-202 Volume 3, *General Flight Rules*. When selecting an alternate, suitable military airfields are preferred if within 75 nautical miles of destination. Plan a 45 minute fuel reserve at the alternate.

14.2.2.7.1. Plan fuel to an alternate only when AFI 11-202V3 requires an alternate to be filed. Refer to section **6.18**, this instruction, for further guidance on selection of alternates.

14.2.2.8. Holding (Fuel Reserves). Plan a 45-minute fuel reserve at the destination or alternate (if an alternate is required). (AMC) Plan an additional 30 minutes of contingency fuel for any unforeseen circumstances.

14.2.2.8.1. Remote destination. If weather conditions require an alternate airfield in accordance with AFI 11-202, Volume 3, aircrews may use 2+00 hours of holding fuel in lieu of an alternate (1+15 holding in lieu of and 0+45 reserve). A remote or island destination is defined as any aerodrome which, due to its unique geographic location, offers no suitable alternate (civil or military) within 2 hours flying time.

14.2.2.9. Transition. Fuel for transition training at the destination. Compute at 7.5% of airplane gross weight per hour. This includes fuel for the initial approach.

14.2.2.10. Minimum Planned Fuel at Begin Descent Point. Consists of fuel required for descent, approach and landing, alternate/missed approach, and holding/minimum landing fuel. Units may develop standard alternate fuel requirements for local training missions however; these fuel requirements will not be less than those specified in this AFI.

14.2.3. Identified Extra Fuel. This value will not exceed 5,000 pounds. Identified extra fuel may be added to RRFL: when fuel availability is limited or not available at en route stops, for known holding delays in excess of standard, for anticipated off course weather avoidance, when reliable wind data or receiver profiles are not available. Mission planners will add an additional 2,500 pounds if the thunderstorm forecast for intended route of flight is scattered or numerous.

14.3. Computer Flight Plan. Only AMC-validated computer flight planning software is approved for use in producing CFPs. The CFP normally serves as the fuel log. It is the crew‘s responsibility to review each CFP and determine if the planned values chosen by the flight planner are sufficient and correct for the mission. The CFP fuel calculations must be verified. This ensures the flight plan has been computed with the correct values. Confirming each and every segment on the flight plan is not necessary. Every effort must be made to eliminate unnecessary "padding" of fuel figures.

14.3.1. When mission requirements dictate a change to the planned mission, the fuel must be recalculated to ensure safe completion of the flight. A pilot may insert the new FMS waypoints for flight plan changes and determine new leg distances. This distance must be converted to air distance by applying the FMS wind factor. When the new leg air distance is known, calculate the new leg burn-off and update the flight plan. It is recommended that the fuel difference be applied at the destination, then work the plan backwards, applying the new leg burn-offs and any air refueling onloads or offloads.

14.3.2. Drag degradation (BDA attached, MPRS pods installed, MPRS hoses in trail, flaps or gear extended) can significantly increase fuel consumption. These and any other external configuration changes, will require modifications to increase standard fuel planning numbers. In addition, ballast fuel may be necessary in certain cargo/MPRS configurations for CG management. This fuel should be considered unusable. Consult applicable MDS performance manual.

14.4. Fuel Conservation. Conservation of fuel requires everyone‘s active participation. For every pound of excess fuel, 3 percent of the excess will be burned each hour. Do not carry extra fuel for convenience.

14.4.1. For AMC units, or AMC-gained units on AMC missions, standard ramp fuel loads will not be used. For AMC units, or AMC-gained units on AMC missions, if actual fuel load exceeds the planned ramp fuel load by more than 5,000 lbs, defuel the aircraft to the planned fuel load. For AMC units, or AMC-gained units on AMC missions, if circumstances prevent defueling, PICs must request a waiver to carry the extra fuel from HQ AMC/A3VK. MAJCOMs will supplement this policy for their affected flights.

14.4.2. Planning guidelines for fuel conservation:

14.4.2.1. Use optimized CFPs when possible.

14.4.2.2. Airlift Missions.

14.4.2.2.1. Plan 99% best range cruise (Mach.79) and optimum altitude, unless mission requirements dictate otherwise.

14.4.2.3. Tanker Missions.

14.4.2.3.1. When cruise to/from AR track or anchor takes less than one hour in duration, plan to and from the AR track or anchor at best range and at an altitude as determined by mission requirements.

14.4.2.3.2. When cruise to/from AR track or anchor exceeds one hour in duration, plan 99% best range cruise and optimum altitude, unless mission requirements dictate otherwise.

14.4.2.3.3. If at all possible, crews will adjust ARCT, vice increasing speed, in the event of a tanker late takeoff.

14.4.2.4. Fighter Escort Missions.

14.4.2.4.1. Plan optimum airspeeds and altitudes consistent with receiver requirements.

14.4.2.5. Limit the use of the APU when possible.

14.4.2.6. Delay engine start (normal engine start is 20 minutes prior to takeoff).

14.4.2.7. Fly en route descents when possible.

14.4.2.8. Raise boom and close sighting window when time between multiple ARCTs is greater than 10 minutes.

14.4.2.9. Retract MPRS hoses and close sighting window between multiple ARCTs when practical.

14.4.2.10. Fly instrument approach patterns with a clean configuration until crossing the initial approach fix or when turning base leg if receiving radar vectors.

14.4.2.10.1. Flaps up maneuvering in the pattern should be conducted at a minimum of Vref + 70 KIAS.

Chapter 15

AIR REFUELING

15.1. General. This chapter establishes air refueling guidelines applicable to KC-135 aircraft and aircrews and is supplemental to those prescribed by the flight manual and other applicable directives.

15.2. AR Limitations. The following limitations apply:

15.2.1. AR altitudes. AR operations will be conducted above 12,000 feet MSL, or 10,000 feet AGL, whichever is higher. Comply with Low Altitude Operations procedures/restrictions in aircraft Technical Order (Section V). ***EXCEPTION***: C-130 and A-10 receivers may be refueled as low as 5,000 feet AGL, if mission requirements dictate.

15.2.1.1. AR operations based at or above 12,000 feet MSL, which momentarily fall below 10,000 feet AGL, but no lower than 5,000 feet AGL, due to over flight of mountain ridges, peaks, etc., are permissible.

15.2.1.2. If refueling must be accomplished below 10,000 feet AGL, limit refueling time to the minimum required to meet operational requirements and then immediately recover to normal refueling altitudes. Crews must ensure thorough knowledge of terrain features when operating below 10,000 feet AGL and will limit operations to flat or rolling terrain, or over water.

15.2.1.3. Pilots will fly no lower than an altitude that provides at least 5,000 ft. of clearance above the highest obstruction or terrain within 5 nautical miles either side of the planned course centerline.

15.2.2. Refueling During Missions. AR should not be accomplished during missions under the following conditions unless operational necessity dictates.

15.2.2.1. Conditions result in marginal control of either aircraft or boom (in the opinion of either the PIC or BO).

15.2.2.2. Either tanker or receiver (except B-52) has less than the full number of engines operating.

15.2.2.3. Tanker aircraft is unable to retract the landing gear.

15.2.2.4. Pod Control Panel malfunction exists that cannot be resolved.

15.2.2.5. MPRS pod malfunction. NOTE: If Pod Control Panel is operational and only one pod is malfunctioning, AR is permissible with operational pod.

15.2.3. Tanker Autopilot. Tanker pilots will notify receiver pilots when any axis of the autopilot is not used. If a tanker pilot or receiver pilot is required to fly autopilot-off for qualification training, the pilot flying the opposing aircraft will be qualified. Verbal notification and acknowledgement will take place between the tanker and receiver prior to conducting autopilot-off training.

NOTE:
This restriction does not apply during FTU training provided the student receiver pilot and the student tanker pilot are under direct IP supervision.

15.2.4. AR Without Tanker Disconnect Capability. Without tanker disconnect capability means the BO cannot trigger an immediate disconnect. After a known loss of tanker disconnect capability with a particular receiver, do not attempt further contacts with that receiver. If the tanker signal system (signal coil) checks good, contact attempts with other receivers are permitted. If an immediate disconnect cannot be triggered on two successive receiver systems, no further contacts will be attempted. Receiver pilots may attempt a contact with another tanker; however, after two successive failures to disconnect from multiple tankers, no further contacts will be attempted with that receiver.

EXCEPTION:
Fuel emergency situations, OPLAN 8044 missions, contingency missions, JCS alert, receiver over water deployment or re-deployment, operational reconnaissance missions, prime nuclear airlift force (PNAF) support missions under normal conditions when the refueling is essential for home base recovery, or when authorized in the mission directive.

NOTE:
When conducting AR without tanker disconnect capability, limit contacts to the minimum number necessary to complete mission requirements. Do not accomplish boom limit demonstrations, or practice emergency separations while in contact.

15.2.5. Manual Boom Latching (MBL) [also referred to as Emergency Boom Latching (EBL)]. Normal tanker disconnect capability and automatic disconnect limits are inoperative. Training and evaluation in MBL procedures may only be accomplished under the following conditions:

15.2.5.1. Direct IP supervision on board receiver aircraft (if other than fighter type).

15.2.5.2. Limit contacts to minimum required.

15.2.5.3. Receiver and tanker AR systems must be fully operable.

15.2.5.4. Do not accomplish boom limit demonstrations, or practice emergency separations.

NOTE:
The BO and receiver pilot must coordinate all actions required by applicable directives and checklists when making AR contacts during the situations listed above.

15.2.6. Reverse AR will be accomplished only in an emergency or for operational necessity, or IAW FTU syllabus training.

15.2.7. Practice Emergency Separations.

15.2.7.1. Prior to actual accomplishment of a practice emergency separation, coordination between the tanker pilot, BO, and receiver pilot is mandatory. Coordination must include information on when the separation will occur and who will give the command of execution. Tanker pilot coordination may be accomplished over interphone with the BO.

15.2.7.2. If separation is initiated from the contact position, the receiver‘s AR system must be in normal, and tanker disconnect capability must be verified by a boom operator initiated disconnect prior to accomplishing the separation. Tanker disconnect capability will not be verified on the same contact as the Practice Emergency Separation, and will be verified with each receiver that accomplishes a Practice Emergency Separation.

15.2.7.3. May be accomplished with passengers on board. Ensure all passengers are seated with seat belts fastened.

15.2.8. Limits Demonstration. KC-135 tanker disconnect capability must be verified by a BO initiated disconnect prior to receivers conducting limits demonstrations.

15.2.9. Receiver AR Training for Unqualified Receiver Pilots. The following procedures apply:

15.2.9.1. The receiver pilot must inform the tanker crew of training status, and receive acknowledgment from the tanker BO.

15.2.9.2. The BO operating the boom controls must be qualified for the applicable category receiver.

NOTE:
This restriction does not apply during FTU training provided the student BO is under direct instructor supervision.

15.2.10. Boom Operator Qualification or Training. Unqualified and non-current boom operators must be under direct instructor supervision to conduct AR operations. Instructor boom operators supervising AR must have immediate access to the ruddevator control stick, and have immediate communication capability with receiver pilot.

15.2.11. Operator Fatigue. If BO or receiver pilot fatigue becomes a factor during AR operations, the receiver will maintain well clear until fatigue is no longer a factor (operator judgment).

15.2.12. Weather limitations.

15.2.12.1. Terminate refueling if moderate turbulence is encountered.

15.2.12.2. Discontinue refueling if in-flight visibility is insufficient to continue safe refueling operations.

15.3. Communications Failure. Aircraft experiencing two-way communications failure during the conduct of AR shall discontinue AR and continue flight in accordance with the following procedures:

15.3.1. Squawk code 7600 for at least 2 minutes prior to exiting the track or anchor.

15.3.2. Receiver aircraft that have not received altitude instructions beyond the exit point shall exit the track or anchor at the lowest altitude specified in the clearance for the refueling portion of the of the flight and proceed in accordance with "Procedures for Two Way Radio Failure IFR-VFR" as set forth in DoD Flight Information Handbook.

15.3.3. Tanker aircraft that have not received altitude instructions beyond the exit point shall exit the track or anchor at the highest altitude specified in the clearance for the refueling portion of the flight and proceed in accordance with "Procedures for Two Way Radio Failure IFR-VFR" set forth in DoD Flight Information Handbook.

15.4. Operational Reporting. Air refueling command and control reporting will be in accordance with **Chapter 2** of this instruction.

15.5. MARSA Applicability for Aerial Refueling. MARSA begins between tanker and receiver when tanker advises ATC it is accepting MARSA. MARSA is not an ICAO recognized term. If in doubt as to what separation is provided by ATC, or what separation the aircrew is responsible for, query the controlling agency.

15.5.1. After MARSA has been declared, controller-assigned course or altitude changes prior to rendezvous completion will automatically void MARSA and are to be avoided.

15.5.2. Once the rendezvous is completed, headings and altitude assignments may be made with the tanker concurrence with MARSA remaining in effect.

15.5.3. Upon rendezvous completion, receiver aircraft shall remain within 3 miles of the tanker until MARSA is terminated.

15.5.4. After air refueling clearance is received and until rendezvous is completed, aerial refueling airspace from the ARIP to the ARCP is sterilized. After rendezvous is completed and tankers or receivers proceed down track, other non-participating aircraft may be cleared through the refueling block airspace with proper separation.

15.5.5. MARSA ends between the tanker and receiver when the tanker advises ATC the tanker and receiver aircraft are vertically positioned within the air refueling airspace and ATC advises MARSA is terminated.

15.6. Altitude Reservations. An ALTRV is authorization by a central altitude reservation function (CARF, EUCARF, PACMARF, and CARU) or appropriate ARTCC/CERAP under certain circumstances, for airspace utilization under prescribed conditions. Air refueling on operational missions often utilizes an ALTRV under these conditions. ALTRVs may include all, a portion, or portions of the intended route of flight. Request and approval format can be found in FAA 7610.4.

15.6.1. PICs will ensure ALTRV approval is received prior to mission execution. ALTRV status may be verified through the appropriate 618 TACC cell.

15.6.2. Aircraft must depart within assigned AVANA (ALTRV Void if Aircraft Not Airborne) time for the purpose of providing separation between altitude reservations. Normal AVANA will be 1 hour. If a mission is to be delayed beyond the AVANA time, coordinate with the C2 authority as soon as possible. Rescheduling will normally be in 24-hour increments after the original schedule.

15.6.3. Aircraft on an ALTRV must operate within the altitude, time, and areas specified in the approval. An ALTRV APVL authorizes the aircraft to climb or descend as specified. Controllers are not required to issue a climb or descent clearance for the various flight segments. They may, however, request that the pilot advise them prior to initiating an altitude change.

15.6.4. In a non-radar environment, aircraft shall advise ATC if actual fix timing will be more than plus or minus 5 minutes from the planned ALTRV en route fix estimate.

15.6.5. File flight plans (1801 or DD175) containing ALTRVs IAW FLIP GP. Include ALTRV name in the remarks section of the flight plan. ALTRV requests or approvals do not eliminate the responsibility to obtain proper diplomatic clearance or file flight plans.

15.7. Receiver Pilot Responsibilities. Receiver Pilots are responsible for:

15.7.1. Squawking normal when separation from the tanker is greater than 3 miles.

15.7.2. Maintaining two-way radio contact with ATC until cleared to the AR block altitude, established in that block, and cleared to the AR frequency by ATC.

15.7.3. Pilots are reminded that oceanic clearances and an acknowledged readback are required for all flights within North Atlantic (NAT) controlled airspace. References for oceanic clearance procedures are FLIP Area Planning (AP)/2 and the NAT Minimum Navigation Performance Specification (MNPS) Manual.

15.7.3.1. Receiver pilots will not rely on the tanker to obtain and readback oceanic clearance. To the maximum extent possible, receiver pilots should obtain their own, individual clearance from the oceanic control authority of the airspace in which they intend to operate, prior to entering oceanic airspace. Pilots will request oceanic clearance prior to oceanic entry point IAW procedures established in AP/2 and NAT MNPS Manual. Consider obtaining clearance and providing readback prior to rendezvous and air refueling.

15.7.3.2. Tanker aircraft will not accomplish clearance readback for receiver aircraft. Receiver PICs are responsible for ensuring that oceanic clearance is always readback to the controlling authority by a member of their crew, and acknowledged by the oceanic controlling authority, prior to entering oceanic airspace.

15.7.4. Opportune Air Refueling.

15.7.4.1. PICs must receive permission from controlling authority (OG/CC, 618 TACC, etc.) prior to accomplishing opportune AR.

15.8. Tanker Pilot Responsibilities. Tanker Pilots are responsible for:

15.8.1. Remaining within the protected lateral, longitudinal, and vertical airspace of the refueling track or anchor including orbit patterns.

15.8.2. Notifying the appropriate ATC facility of all altitudes vacated and not anticipated for further use by refueling aircraft. Such altitudes shall not be reoccupied without further ATC clearance.

15.8.3. Receiver navigation, regardless of the number of tankers or receivers, after rendezvous completion through completion of refueling operations (AR and MARSA have been terminated) except when under control responsibility of a military radar facility while in an anchor area.

15.8.4. Maintaining communications with the appropriate ATC facility. All communications during refueling operations, including those concerning receivers, shall be between the ATC facility or military radar unit and tanker. To the extent practical, receivers shall establish communications with the tanker prior to or when departing the ARIP on the specified AR frequency. The tanker shall assume position reporting responsibility for the receivers upon rendezvous completion.

15.8.5. Coordinating altitude and route clearance:

15.8.5.1. From the ATC facility for receivers and tanker at least 5 minutes prior to refueling completion except when both aircraft are operating on an approved altitude reservation (ALTRV).

15.8.5.2. Through the radar controller when operating in refueling anchors with military ground radar. At least 5 minutes prior to completing refueling operations, the military radar facility shall forward requests to the assigned ATC facility and subsequently relay ATC clearances for the tanker and receiver aircraft from the ATC facility.

15.8.5.3. Tanker aircrews should not normally obtain oceanic clearances for receiver aircraft intending to operate in NAT oceanic airspace. Tanker aircrews will not readback receiver aircraft oceanic clearance. This is a receiver pilot responsibility.

15.8.6. Vertically position aircraft prior to reaching the planned exit point to facilitate the safe and efficient transfer of separation responsibility from the military, under the provisions of MARSA, to the ATC facility on completion of refueling operations. Vertical separation of receivers and tankers shall be accomplished within the assigned altitudes.

15.8.7. Providing each receiver, upon request, with the aircraft‘s position at the completion of refueling operations. Additional information concerning amendments or changes to the receiver‘s ATC clearance shall also be provided as appropriate.

15.8.8. Coordinating all refueling formation operations to ensure all aircraft are in proper post air refueling formation prior to cell breakup. Prior to terminating air refueling, the lead tanker will confirm all aircraft in the formation are in proper post air refueling position with required lateral/vertical separation.

15.8.9. Accomplishing Search and Rescue (SAR) procedures IAW AFI 11-207, *Combat Aircraft Delivery.* In an emergency, the flight leader immediately notifies the tanker commander. The tanker aircrew notifies ATC. In the event of a downed or ditched receiver, ATC notifies the Rescue Coordination Center, which in turn alerts the nearest SAR assets. The tanker provides cover as long as fuel reserves allow. Remaining receivers proceed unescorted to the nearest abort base or continue the mission with remaining tankers.

15.8.10. Opportune Air Refueling.

15.8.10.1. PICs must receive permission from controlling authority (OG/CC, 618 TACC, etc.) prior to accomplishing opportune AR with US receivers.

15.9. ATC Clearance. AR operations are normally conducted on tracks or anchor areas published in DOD FLIP. Operational considerations may require AR outside published areas or within an ALTRV. The tanker PIC shall receive specific ATC clearance from the appropriate ATC facility for the following:

15.9.1. Entry to/exit from assigned aerial refueling altitude block (except on an approved ALTRV).

15.9.2. Altitudes requested for tanker and receiver aircraft upon completion of air refueling.

15.9.3. Routing for each aircraft or formation flight when exiting the refueling track prior to or beyond the exit point, or different from the flight plan routing.

15.9.4. Extending refueling operations beyond the track or anchor exit point due to adverse weather or winds, mission requirements, etc.

15.9.5. Use of altitudes in excess of those for which specific clearance has been granted (i.e., tobogganing).

NOTE:
Protected airspace for AR tracks is defined in FAA order 7610.4M SPECIAL MILITARY OPERATIONS (or current version), available at: **http://www.FAA.gov/atpubs/mil/index.htm#order**. If tankers need to exceed these bounds to accomplish the rendezvous, they must request clearance from ATC prior to exiting the protected orbit pattern airspace.

15.10. Emergency AR. When an emergency AR requirement arises, units tasked will attempt to fill the requirement from available unit resources. Use unit training sorties as first priority and generated alert sorties as second priority. If no capability exists, notify the controlling agency of the requirement and unit shortfall. The following procedures apply for unit C2 personnel:

15.10.1. Units will not routinely preposition additional aircraft to satisfy potential emergency AR requirements.

15.10.2. Time permitting, coordinate emergency AR requirements with receiver parent MAJCOM.

15.10.3. The unit command post should coordinate or direct unit actions.

15.10.4. Identify unit sortie when notified of emergency air refueling requirement.

15.10.5. Coordinate with OG/CC.

15.10.6. Notify 618 TACC of requirement and proposed actions.

15.10.7. Notify squadron or aircrew of requirement. Provide ARCT, rendezvous information, altitude, receiver call sign, and communication plan.

15.10.8. Advise receiver of planned actions.

15.10.9. Notify the ARTCC liaison of requirement.

15.11. Air-to-Air Refueling with Foreign Aircraft. ATP-56(B) serves as the source document for air refueling information among participating countries and is no longer limited to NATO countries only.

15.11.1. Tankers will only refuel those aircraft listed in ATP 56 (B) or specifically authorized by HQ AMC/A3V. Receiver aircraft not previously certified for refueling operations (includes foreign variants of US-produced aircraft) must be certified for technical and operational compatibility in accordance with USAF regulations prior to refueling.

15.11.2. AR of foreign aircraft must be tasked by proper C2 authority. Opportune AR of foreign aircraft is prohibited.

15.12. Coronet East Mission Over Flights in France. Aircrews must explicitly follow pre-coordinated mission profiles on missions that transit French airspace. Although ALTRVs are not formally recognized in the French ATC system, pre-coordinated Coronet East Missions are afforded a certain degree of additional protection while in French airspace. In exchange for this special handling, it is absolutely essential aircrews adhere to pre-coordinated routes and altitudes to avoid problems (including the portion of the flight to/from the ALTRV). Failure to do so creates difficult diplomatic situations and jeopardizes future authorization for US Military over flights of France. Aircrews will not request any maneuvers that have not been coordinated in advance with French ATC. Examples of these maneuvers include formation split up and rejoin

(unless pre-coordinated). During the portion of the flight to/from the ALTRV, tanker and receivers must remain in formation at a single altitude while in French airspace. If a request (even if pre-coordinated) is denied by the controller, follow their instructions.

Chapter 16

MISSION PLANNING

16.1. General. This chapter standardizes procedures for planning, briefing, and reviewing all missions. The PIC is ultimately responsible for the accuracy of the mission materials. Unit mission planning facilities should possess essential mission planning material.

16.1.1. Mission planning is normally conducted the day before the mission. Operations group commanders may elect to use a "same day mission plan" option.

16.1.2. Mission Commander. **Chapter 2, Para 2.6,** of this instruction specifies mission commander requirements and qualification criteria. AFTTP 3-1.KC10/KC-135 Volume 1 contains a mission commander‘s checklist that is intended to assist mission commanders with their duties and responsibilities.

16.1.3. Theater Indoctrination Folders (Part IV of FCIF) should provide additional information for aircrew and planning staff review. (Not applicable for ANG or AFRC)

16.2. Not Used.

16.3. Not Used.

16.4. Not Used.

16.5. Briefings.

16.5.1. Pre-Deployment Briefing. Prior to deployments, the operations officer, mission commander, or designated representative should assemble the crew and brief description and purpose of the mission, tentative itinerary, aircraft configuration, special equipment, fuel load, clothing required, anticipated housing and messing facilities, sufficient money to defray individual‘s anticipated expenses, personal equipment/field equipment requirements, special clearance requirements, and flying safety.

16.5.2. Other Briefings. In addition to the briefings above, mission participants will also conduct briefings as required in **Paragraph 6.12** of this AFI.

16.6. Mission Debriefings. Hold immediately after the mission if practical. Include the following:

16.6.1. Aircrews will attend the operations and maintenance debriefings as directed by unit or mission commander. Maintenance debrief should be conducted ASAP after flight.

16.6.2. Intelligence debriefings will be accomplished as soon as practical after mission recovery, normally within 30 minutes. Debriefings will be as prescribed in USTRANSCOMR 200-3, Intelligence Debriefing and Reporting.

16.6.3. Aircrew Debrief. Mission critiques and debriefings are perhaps the most important learning tool available to aircrews and will be done after each mission. All crewmembers will attend. Use this time to review the entire mission.

16.6.4. For formation flights, a post-mission debrief will be conducted by the mission commander or formation leader.

Chapter 17

EMPLOYMENT

NOTE: CERTAIN TECHNICAL INFORMATION WAS INTENTIONALLY OMITTED OR GENERALIZED TO KEEP THIS CHAPTER UNCLASSIFIED. USERS SHOULD BE AWARE THAT WRITTEN ADDITIONS TO ANY PORTION OF THIS DOCUMENT COULD CAUSE THE MANUAL TO BECOME CLASSIFIED.

17.1. General. . Refer to AFTTP 3-3.KC-135 for additional guidance on tactics training, specific maneuver descriptions, and tactical maneuver procedures. AFTTP 3-3.KC-135, Chapter 12, *Proficiency Exercises*, details the tactics maneuvers required for tactics certification. All crewmembers must complete tactics certification IAW AFI 11-2KC-135 Volume 1, **KC-135 Aircrew Training**.

17.2. Responsibilities. The tactics training program is a coordinated effort between the unit‘s intelligence office, wing/group training office, and wing/group weapons and tactics flight, in order to ensure continuity and the unit‘s specific mission tasking is addressed.

17.2.1. Tactics Reference Library and Tactics Read File. The unit tactics officer is responsible for developing procedures for timely dissemination of tactical information to unit aircrew members. See AMCI 11-207, *AMC Weapons and Tactics Program*, for the Tactics Reference Library.

17.3. Not Used.

17.4. Tactics Flight Training.

17.4.1. Tactical Maneuvers. Accomplish tactical maneuvers IAW procedures provided in AFTTP 3-3.KC-135, Chapter 12. Once certified, tactical maneuvers may be flown on continuation training and operational missions with passengers on board. Notify passengers prior to conducting tactics maneuvers training.

17.4.2. Objectives. Accomplish all flight maneuvers with strict adherence to aircraft limitations as defined in KC-135 tech orders and this AFI.

17.4.3. Flight Training Limitations and Restrictions:

17.4.3.1. Limitations. The following limitations apply to all in-flight tactics training.

17.4.3.1.1. Aircraft tactical arrival and departure (TAD) training is limited to three-ship formation, VMC, 45 degree angle of bank maximum, and 500‘ AGL minimum ingress/egress altitudes.

17.4.3.1.2. Aircraft scram training is limited to VMC, 45 degree angle of bank maximum, 10,000‘ AGL minimum altitude. Scatter turns are limited to two-ship formations.

17.4.3.1.3. Limit formation in-place turns to a maximum of 30 degrees of bank and 90 degrees of turn. ***EXCEPTION*** **:** Up to 180 degrees of turn for 509th WPS.

17.4.3.2. Intercept Training Restrictions/Procedures. See AFI 11-214, *Air Operations Rules and Procedures*, for specific guidance.

17.5. Not Used.

Chapter 18

AIRCRAFT FORMATION

18.1. General. This chapter covers basic formation procedures and operations. All procedures described apply to all KC-135 and KC-10 aircraft. The broad term "formation" as used does not differentiate between specific tactics of en route formation or visual formation. Specific references to each tactic must be made to ensure complete understanding.

18.1.1. All formation flights will be planned, briefed, and critiqued in accordance with the applicable Technical Order, this chapter, ATP-56(B) and AFTTP 3-3.KC-135.

18.1.2. These procedures are standardized with KC-10 formation operations.

18.2. Specified Times. The formation leader determines the sequence of events (SOEs) and mission times based on mission requirements. Local SOEs for formation training missions may be established for use at home station. Changes in briefing or mission timing will be relayed to all formation members at the earliest opportunity.

18.3. Weather Minimums. Comply with weather minimums for takeoff and landing established in AFI 11-202V3 and **Chapter 6** of this instruction.

18.4. Ground Operations. The formation leader should accomplish radio checks and copy ATC clearance in the chocks. All formation members should make every effort to accomplish HAVE QUICK and SECURE VOICE radio operations on all local formation training missions. All participating crews will accomplish as much of the pre-takeoff checklists as possible prior to taxi. Lead will obtain taxi and takeoff clearance.

18.5. Communications and Radio Procedures. Radio and interphone discipline are critical factors in maintaining formation integrity. The formation leader will ensure all formation members have a complete understanding of the radio monitoring plan.

18.5.1. Formation will not be flown on training sorties without inter-plane voice communications capability.

18.5.2. When radio silent operations are required, the formation leader will pre-brief all formation members on specific procedures for frequency changes (i.e. timing, visual signals, etc.).

18.5.3. Visual signals may be used as an alternate or secondary means of communication between aircraft.

18.5.4. The flight lead will initiate all frequency changes. Lead will allow enough time for frequency change to be accomplished before initiating check-in. Lead must ensure all flight members are on frequency before initiating any action or making any radio calls to ARTCC, etc. If a flight member does not respond, a secondary radio or guard may be used to direct the wingman to the proper frequency. Specific procedures should be pre-briefed by the flight lead. Crews should maintain non-primary radios during silent operations; however, planned frequency changes may be performed on briefed timing or visual signals. All flight members must be on a common frequency.

18.6. Launch, Departure, and Level-Off.

18.6.1. Formation Briefing. The formation leader will conduct a detailed briefing for all crewmembers covering the planned activities, procedures, techniques, specific EMCON procedures, and division of formation responsibilities. PICs may excuse crewmembers from the formation briefing to perform preflight duties, however the PIC will back brief all appropriate items. If lead changes are planned, each formation lead will brief their portion of the mission. The formation leader will ensure all crewmembers thoroughly understand their responsibilities, to include assumption of formation leadership.

18.6.1.1. When deviations from the briefed mission are necessary, they will be directed by the leader. No actions will be taken until they have been coordinated with and are understood by all formation members.

18.6.1.2. Non-collocated Units. If aircraft depart from separate bases and then rendezvous for formation activity, the formation lead should make every effort to conduct a telephone briefing with joining tanker and receiver formation leaders. If this is not possible, after detailed sortie study, the coordination and briefing between the appropriate lead planning agencies or mission commanders will satisfy formation briefing requirements. At a minimum, radio contact will be established between all formation aircraft NLT 15 minutes prior to join up. The formation lead will ensure altitude separation for aircraft in the formation or joining the formation. Coordination of these formations will include designation of mission commander responsibilities for all phases of the formation operation.

18.6.1.3. Unit Responsibilities. Each unit will develop post takeoff separation procedures and departure separation plans with the local controlling agency. Each plan must consider emergency aspects, aircraft performance capabilities, terrain features, penetration of weather after takeoff, and local ATC restrictions. Procedures should also be developed for items such as aborts, lost communications, EMCON, and the recovery of formation aircraft.

18.6.2. Filing Procedures. Flight plans for all formation members will reflect the same route of flight for the portion of flight the aircraft will be in formation. Local procedures for filing may be used provided they are coordinated and documented in writing by the unit and local FAA (or ICAO) representatives. Formation flights which do not consist of all RVSM aircraft will be considered non-RVSM compliant and will have 2,000 ft vertical separation standards applied in RVSM airspace.

18.6.3. Taxi Procedures. Follow the taxi sequence established in the briefing. Maintain safe interval and a safe speed during taxi.

18.6.4. Takeoff Timing Interval. Defined as the time between initiation of takeoff power for each successive aircraft in the formation. Use of takeoff power radio calls is not recommended. Minimum takeoff timing interval is 60 seconds between KC-135 and other non-KC-135 aircraft in the formation. Minimum timing interval between like-model KC-135s (and KC-135E following a KC-135R/T) is 30 seconds. Minimum timing interval for KC-135R/T following a KC-135E is 40 seconds. Takeoff interval may be extended and sequence may be varied as necessary depending on aircraft acceleration and performance, training requirements, weather, airfield conditions, and mission requirements.

18.6.5. Formation Takeoff Procedure (Hold-Line through Takeoff). Receivers should takeoff first. Any time take off is aborted, an abort call will be made by the aborting aircraft over the ATC radio frequency being used by the formation. At bases with dual runway operations, aborting aircraft will identify the runway in use. An additional radio call announcing an abort is recommended over the formation interplane frequency.

18.6.6. Departure. (N/A Fighter Buddy Departure) Climb speed below 10,000 feet MSL is 250 KIAS, unless a higher speed is required to accommodate the minimum safe maneuvering speed of the heaviest aircraft in the formation (N/A USAFE). Planned climb speed will not be less than the heaviest aircraft's 3-Engine Climbout + 50kts. Above 10,000 feet MSL the normal planned climb speed is 285 KIAS. Above 10,000 feet MSL, for mixed KC-10/KC-135 cell formation departures, the normal planned departure speed is 285 KIAS (***NOTE:*** this equates to 290 knots in the KC-10) for formations with KC-10s less than 500,000 pounds gross weight and 310 KIAS (***NOTE:*** this equates to 310 knots in the KC-10) for formations with KC-10s equal to or greater than 500,000 pounds gross weight. Planned climb speeds apply to the lead aircraft only. Following aircraft may exceed/lag these speeds as necessary to accomplish the rejoin and maintain proper formation position. Climb speed schedules which result in KC-10s climbing with slats extended will be avoided. If visual, radar, A/A TACAN, TCAS, and radio contact are all lost, and altitude separation cannot be ensured, lost wingman and locally developed abort procedures will be accomplished.

18.6.6.1. Formation Join-Up. Differential airspeed and/or visual cut-off in departure turns are the approved methods for formation join-up. The use of visual cut-off is restricted to day/VMC operations only and requires approval from ATC. Altitude separation will be carefully monitored during closure to en route spacing. Under other than VMC or when visual contact cannot be maintained with all formation members, altitude separation will be accomplished using TCAS or by periodically having each aircraft in the formation report its altitude or flight level. During night or instrument flight conditions, aircraft should turn at the same geographic points as the preceding aircraft.

18.6.6.2. Buddy Departures (Tanker Snake/Formation Climb Procedures). Buddy departures may be used by collocated tanker and fighter or bomber units. The intent of this type of departure is to facilitate the join-up of receivers with their mated tankers. The procedures below are generalized and may require modification based on aircraft and airspace limitations.

18.6.6.2.1. VMC Procedures. VMC procedures may be used when weather (ceiling and visibility) is 3000/5 or greater. Receivers will normally launch first and intercept an arc to place themselves on extended (approximately 10 NM) final to the departure runway. When the receiver calls 10 NM final, or the last receiver turns cross wind, or on predetermined timing, the tanker will launch. Continue with a straight ahead rejoin or according to briefed departure routing.

18.6.6.2.2. IMC Procedures. Under IMC or when weather is less than 3000/5, plan to rendezvous the formation at an orbit point along the route of flight. Tankers will normally launch first unless mission fuel load and performance considerations dictate otherwise. Receivers should be rejoined prior to rendezvous with the tankers.

18.6.7. Level-Off. An altitude block will be obtained for all intermediate and final level-off altitudes. Block altitudes will provide a minimum of 500-foot separation between aircraft. If ARTCC will not approve a block altitude, then request IFR separation or hard IFR altitudes for each aircraft in formation. Stack down from lead during intermediate level-off altitudes.

18.6.8. Airborne Aborts. Any aborting aircraft will clear the planned launch stream and take appropriate actions dictated by the reason for abort. Aborting aircraft will obtain ATC clearance prior to altering their route, or declare an emergency and deviate as necessary. The formation leader and other formation members should be ready to assist the aborting aircraft in any way possible.

18.7. En route Formation. En route formation consists of multiple tanker aircraft in trail, stacked up at 500-foot intervals with 1 NM separation (2 NM may be used for contingency operations). The primary means of maintaining proper formation position are TCAS under instrument conditions and visual or TCAS under visual conditions. When visual conditions permit, minimize radio transmissions. Heading and airspeed changes need not be announced. In IMC, the formation leader should ensure all formation members are aware of heading and airspeed changes, either through thorough pre-briefing, or use of inter-plane communications. Aircrews will monitor the position of all other aircraft and, on inter-plane, notify any aircraft excessively out of position.

18.7.1. Turns. The formation leader should pre-brief specific bank angles for turns. This will help reduce inter-plane communications and aid in maintaining formation position. To maintain formation position during turns, all aircraft must initiate the turn over the same geographic point, unless executing a formation retrograde maneuver as described in AFTTP 3-3.KC-135.

18.7.2. Airspeed and Altitude. Formation climbs and descents will be accomplished using a constant airspeed and vertical velocity. The formation leader will ensure en route airspeed is compatible with the most restrictive aircraft in the formation.

18.7.3. Autopilot Operations. The autopilot should be used to reduce fatigue and aid in altitude separation. Consideration should be given to placing an aircraft with an inoperative or malfunctioning autopilot in last position in the formation for missions with extended duration in formation.

18.7.4. Visual Station-Keeping. Refer to AFTTP 3-3.KC-135 for visual station-keeping techniques. During operational situations requiring EMCON 3 or 4, and marginal visibility prohibits normal formation spacing, a compressed trail formation may be used. Formations may be compressed, but should not be less than 250 feet stacked up and 1/2NM spacing between aircraft.

18.7.5. Formation Navigation Procedures**.** Cell lead is responsible for the navigation of the entire formation.

18.7.5.1. The primary responsibility of cell aircraft is station keeping. Cell aircraft, other than lead, should accomplish necessary navigation requirements to assume lead should the necessity arise.

18.7.6. Navigation coordination between aircraft within the formation is encouraged unless operational (EMCON) restrictions or AR requirements limit communication. Do not

jeopardize formation tactics or integrity for this purpose. However, if cell aircraft detect a known navigation error, inform lead immediately.

18.8. Lost Wingman Procedures. These procedures are to be used when visual, radar, TCAS, or radio contact cannot be maintained and altitude separation cannot be ensured. In any lost wingman situation, immediate separation of aircraft is essential to safety. Upon losing all contact with the leader, or if unable to maintain formation due to disorientation, the wingman will simultaneously execute the applicable lost wingman procedure while transitioning to instruments. The bank angle used to achieve separation should equal the number of degrees to be turned. Smooth application of control inputs is imperative to minimize the effects of spatial disorientation. Any aircraft, which can maintain contact with an aircraft executing a lost wingman maneuver will remain in formation with that aircraft until otherwise directed by the leader. When lead is notified of a lost wingman, lead will take appropriate action, as the situation dictates, until positive separation is assured. Lead will establish a reference heading and altitude after initial separation is assured. During recovery, if the flight has a block altitude clearance, wingmen will establish appropriate altitude separation.

18.8.1. Two Aircraft Flights:

18.8.1.1. In wings-level flight (climbing, descending, or level) simultaneously transition to instruments, inform lead, turn 15 degrees away and maintain new heading for 15 seconds, then resume course. Adjust to formation or obtain separate clearance if required.

18.8.1.2. In turns (climbing, descending, or level):

18.8.1.2.1. On the outside of the turn, transition to instruments, roll to wings level and inform the leader. Continue straight ahead to ensure separation prior to resuming turn. Adjust to formation or obtain separate clearance as required.

18.8.1.2.2. On the inside of the turn, simultaneously transition to instruments to maintain established bank angle, reduce airspeed by 10 KIAS to ensure clearance, and inform lead. Lead will simultaneously roll wings level, maintain airspeed, and acknowledge wingman‘s call. If lead has acknowledged the lost wingman call and confirms he or she has rolled wings level, the wingman will, after 15 seconds, roll wings level, establish 500 feet altitude separation, turn to lead‘s referenced heading and attempt to acquire lead on radar/TCAS. If loss of visual contact is not acknowledged by lead, maintain established bank angle, establish 500 feet altitude separation, roll out on new heading, attempt to acquire lead on radar/TCAS, and form into enroute formation position. If TCAS or radar contact cannot be re-established, obtain separate clearance from the controlling agency.

18.8.2. Three Aircraft Flights. If only one aircraft in the flight becomes separated, the procedures above would provide safe separation. However, as it is impossible for number three to immediately ascertain that number two still has visual contact with the leader, it is imperative number three‘s initial action be based on the assumption number two has also become separated. If number two is still in visual, TCAS, or radar contact, he or she will maintain position. If number two goes lost wingman, he or she will follow the procedures outlined above. Number three will follow the procedures listed below:

18.8.2.1. In wings level flight (climbing, descending, or level) simultaneously transition to instruments, inform lead, turn 30 degrees away, and maintain new heading for 30 seconds, then resume course. Adjust to formation or obtain separate clearances as required.

18.8.2.2. In turns (climbing, descending, level):

18.8.2.2.1. In the outside of the turn, simultaneously transition to instruments, inform lead and reverse direction of turn for 15 seconds to ensure separation from lead and number two. Adjust to formation or obtain separate clearance as required.

18.8.2.2.2. In the inside of the turn, simultaneously transition to instruments to maintain established bank angle, reduce airspeed by 20 KIAS to ensure clearance, and inform lead. Lead will simultaneously roll wings level, maintain airspeed and acknowledge the wingman‘s call. If lead has acknowledged the lost wingman call and confirms he or she has rolled wings level, number three will, after 30 seconds, roll wings level, establish 1000 feet altitude separation, turn to lead‘s referenced heading, and attempt to acquire lead and number two on TCAS and radar. If loss of visual contact is not acknowledged by lead, maintain established bank angle, establish 1000 feet altitude separation, roll out on new heading, attempt to acquire lead on TCAS and radar, and form into en route formation position. If TCAS or radar contact is not re-established, obtain separate clearance from the controlling agency.

18.8.3. Lost Wingman Procedures during Receiver A/R. Depending on the makeup of the A/R formation, it is possible that in the event of a breakaway, receiver aircraft may find themselves co-altitude with another aircraft in the formation. If, during a breakaway, the receiver aircraft loses sight of the tanker aircraft, T.O. 1-1C-1-14 requires the receiver aircraft to descend to an altitude 1000 feet below the tanker. In the event this places the receiver aircraft co-altitude with another aircraft in the formation, immediately coordinate a de-conflicted altitude with tanker lead. If unable to immediately contact tanker lead and visual, A/A TACAN, TCAS, radar, or radio contact with the co-altitude aircraft cannot be maintained, descend to an altitude that will provide positive separation from other aircraft and decrease airspeed to ensure lateral separation..

18.9. Formation Position Changes. Follow the procedures described in AFTTP 3-3.KC-135, chapter 5.

18.10. Formation Break-Up and Recovery. Formation separation procedures will be thoroughly planned and briefed by the formation leader. Do not initiate formation separation procedures without ATC approval.

18.10.1. If formation descent and arrival is desired, detailed descent profile, airspeed reduction, and configuration procedures will be thoroughly briefed.

18.11. Mission Debriefing and Critique. A complete mission debriefing and critique should be conducted by the formation leader following the mission.

18.12. Definitions.

18.12.1. A standard formation is one in which a proximity of no more than 1-mile laterally or longitudinally and 100 feet vertically from the flight leader is maintained by each wingman.

18.12.2. Nonstandard formations are those operating under any of the following conditions:

18.12.2.1. When the flight leader has requested and ARTCC has approved other than standard formation dimensions.

18.12.2.2. When operating within an authorized ALTRV or under the provisions of a letter of agreement.

18.12.2.3. When operations are conducted in airspace specifically designed for special activity.

18.12.3. Most formations are nonstandard and should be so indicated in the remarks section of the filed flight plan. Flight leaders are required to advise ARTCC on initial contact, and each sub-sequent controller or controlling agency, of separation being used. Advisories are not required when operating within an ALTRV or airspace specifically designed for formation flight activity.

Chapter 19

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Chapter 20

AEROMEDICAL EVACUATION

Section 20A—General Information

20.1. Mission.

20.1.1. This chapter applies to Air Force KC-135 Aircrews, aeromedical evacuation aircrew members (AECM) and all management levels concerned with aeromedical evacuation (AE) operations of KC-135 aircraft. All operators involved will use this chapter in conjunction with AFI 11-2AEV3*, Aeromedical Evacuation (AE) Operations Procedures* for all KC-135 AE missions.

20.1.2. Use of KC-135 aircraft for AE transport of ill or injured DoD members and their dependents is authorized. C2 agencies may direct AE missions aboard KC-135s at any time. AECM will utilize procedures in applicable AFI 11-2AE and AFI 41-307,in conjunction with this publication, to accomplish the AE mission.

20.1.3. Crew Resource Management (CRM) between Aeromedical Evacuation (AE) crews and flight crews is paramount to the success of this challenging mission.

20.2. Operational Control and Reporting of Aeromedical Evacuation Forces.

20.2.1. HQ AMC is lead command for AE. HQ AMC Directorate of Operations (AMC/A3) is the executive agent for operational AE missions.

20.2.2. Command and control (C2) of AE missions is the same as other airlift missions.

20.2.3. Aircraft Commander (AC) is the qualified pilot-in-command (PIC) responsible for command and control of all persons aboard the aircraft during an AE mission. In matters of flight safety, crew duty waivers, or operational considerations, their decisions are final. In matters of patient care, the medical crew director MCD decisions are final.

20.2.4. Medical Crew Director (MCD). The MCD is a qualified flight nurse responsible for the overall supervision of patient care and management of AECMs assigned to AE missions. They advise the PIC on patient condition and the use of medical equipment that may affect aircraft operations. The MCD is directly responsible for the safety and medical well being of patients on the aircraft and coordinates enplaning and deplaning procedures with the aeromedical evacuation operations officer (AEOO) and supporting agencies.

20.2.5. HQ AMC Command Surgeon (AMC/SG) is responsible for providing clinical standards and procedures concerning the treatment of patients in-flight.

20.3. Alerting Procedures.

20.3.1. Local AMC C2 will alert the PIC who will alert the MCD. The MCD will alert AECMs. The intent is to link the PIC, local AMC C2 and MCD before mission execution. Crew alerts will be 4+15 hours before scheduled takeoff time to allow 1 hour for reporting and 3+15 hours for mission preparation.

20.3.2. When AECMs are staged separate from flight crews, the MCD will contact local AMC C2 and establish alert, show time, etc. MCDs will make every effort to brief other

crewmembers on any mission irregularities prior to crew rest. Utilize local AMC C2 to leave non-emergency messages.

20.3.3. Local AMC C2 will provide PIC/MCD mission information when they check mission status. Local AMC C2 is the link between AECMs and the PIC, providing mission status updates to both parties.

20.3.4. AE mission requirements can change depending on clinical status of patient(s) and aircraft availability. There may be occasions when aircraft cannot depart (i.e. MX problems) or emergency patient movement that may separate an AE crew from the flight crew. The MCD will brief any changes to the PIC and local AMC C2 to de-conflict potential problems.

20.4. Pilot In Command Responsibilities.

20.4.1. Establish communication link with the MCD during pre-mission planning and throughout the mission.

20.4.2. Brief AECMs on the mission, flight plan, flight profile, and current threat (as applicable).

20.4.3. The PIC will fully integrate all crewmembers into a single crew throughout the mission, including en route transportation, dining, billeting, etc.

20.4.4. Coordinate with MCD and C2 agencies for cabin altitude/flight restrictions based on patient requirements.

20.4.4.1. Maximum altitude for floor loaded patients is FL350. Patients will have an EPOS pre-positioned on their litter when floor loaded.

20.4.5. Advise AECMs of intentions to start engines, taxi, itinerary changes, in-flight difficulties, and additional responsibilities of the flight crew.

20.4.6. Brief MCD on additional responsibilities of flight crewmembers.

20.5. Boom Operator Responsibilities.

20.5.1. Assist the AE crew with aircraft systems.

20.5.2. Coordinate emergency evacuation plan with MCD.

20.5.2.1. Provide a thorough evacuation brief to AECMs.

20.5.3. Operate aircraft systems, i.e., heat/air conditioning, emergency exits, etc.

20.5.4. Assist the AECMs as necessary, as long as such assistance does not interfere with primary duties.

20.5.5. Ensure aircraft is prepared for AE mission.

20.5.5.1. Perform cargo loading preflight IAW T.O. 1C-135-9.

20.5.5.2. Supervise loading of patient support pallets (PSP).

20.5.5.3. Assist with aircraft configuration for AE operations.

20.5.6. Transmit load messages and radio transmissions to tasking AE C2 agency as requested by the MCD.

20.6. Aeromedical Evacuation Crew Responsibilities.

20.6.1. Responsible for patient clinical care activities including loading, positioning, and offloading.

20.6.1.1. Coordinate with PIC for cabin altitude/flight restrictions based on patient requirements.

20.6.2. Configure aircraft for AE operations.

20.6.3. Install/secure and remove medical equipment/supplies.

20.6.3.1. Do not use seat track/stanchion fitting ring(s) to secure any equipment.

20.6.4. Assist the BO with observation of passengers when it does not interfere with primary duties.

20.6.4.1. Non-medical attendants are the responsibility of AECMs.

20.6.5. The MCD or designated AECM should be on aircraft inter-phone (headset) for all phases of flight, and will be on aircraft inter-phone during critical phases of flight to include take-off and landing.

20.6.6. The MCD will ensure a patient position plan is given to the PIC or BO NLT 2 hours prior to scheduled departure time.

20.7. Ground Operations.

20.7.1. All engines will be shut down during enplaning and deplaning of patients.

20.7.2. Temperature. Be cognizant of high cabin temperatures during ground operations.

20.7.2.1. The PIC/BO should request an air conditioning cart whenever patients/AE crew are on board and the ambient temperature may exceed a comfortable level.

20.8. Refueling Operations.

20.8.1. Concurrent servicing with patients onboard is not authorized.

20.9. Aircraft Configuration.

20.9.1. On opportune or dedicated AE missions, configure the aircraft during preflight.

20.9.2. Litter Support Provisions are not available on the aircraft

20.9.3. For PSP management refer to Operations and AFI 11-2AE Volume 3, *Aeromedical Evacuation (AE) Operations Procedures* Addenda A.

20.9.3.1. For planning purposes, use the following weights for empty PSPs:

PSP-W(2 litter tiers)	826 pounds
PSP-M(1 litter tier and 3 seats)	820 pounds
PSP-S(6 seats)	814 pounds
RampExtender	17 pounds
Ramp Spacer	9 pounds

20.9.3.2. Each litter position is rated to hold 320 lbs. Each seat is rated to hold 260 lbs.

20.9.3.3. The maximum total PSP weight will not exceed 2000 pounds. This includes the weight of the PSP. If weight limit is exceeded, supplemental restraint is required. Exceeding 2000 pounds requires an additional applied restraint to meet a minimum 9 G forward restraint capacity. Use T.O. 1C-135-9 when applying supplemental restraint.

20.9.3.4. When possible, configure PSP seats facing aft.

20.9.4. The PSP will be transported to the aircraft by aerial port personnel, positioned and secured on the aircraft by the BO and configured by the AE crew.

20.9.4.1. Exercise caution when maneuvering the pallet in and around the aircraft.

20.9.5. AECMs will configure the pallet. Boom operators should open the aircraft 3 hours prior to take off to facilitate AECM aircraft configuration. Boom operators will coordinate with the MCD if the aircraft will not be open 3 hours prior to takeoff. Loading the PSP and airline seats should be accomplished before entering crew rest. In cases when the KC-135 is configured at an en route stop, the MCD will coordinate with the PIC and BO, to determine when the aircraft should be configured for the next day‘s mission. When possible, the aircraft should be configured the day prior to the mission. The MCD is responsible to ensure coordination between appropriate agencies has occurred or are in place to deliver PSPs to the aircraft.

20.9.6. PSP configuration will be determined by patient requirements. Each seat has storage capacity for required pre-positioned life support (EPOS and life preserver unit).

20.9.7. PSP ramps, extenders and spacers should be used with PSPs to mitigate hazards created by uneven surfaces. Spacers are designed to cover the gaps between the PSP‘s.

20.9.8. Once secured in the roller system, secure PSPs with a cargo tie-down strap to the roller system rails to prevent forward-aft pallet movement during flight.

20.9.9. Floor Loading. Litter patients may be floor loaded using standard cargo tiedown straps to secure the litter to the floor. Shoring is required to prevent damage to the aircraft floor.

20.9.9.1. Do not place litters in front of exits or on top of landing gear inspection window covers (marked in red, yellow, or black).

20.9.9.2. Maximum floor loaded litter capacity is eight patients.

20.9.9.2.1. Maximum ambulatory capacity depends on aircraft configuration.

20.9.10. Configure seats IAW AFI 11-2AEV3, *Aeromedical Evacuation Operations Procedures*, Addenda A. Aft facing stud mounted seats are the only approved seats for use on the KC-135.

20.9.10.1. For AE-3 configurations install only four aft tandem seats (8-seats total) from Body Stations 860-920.

20.9.10.2. Aircraft will depart home station with airline seats installed. Coordination is required when airline seats are located at the staging point. AECMs will ensure seats do not block emergency exits and will notify the BO if exits are blocked.

20.9.11. Coordinate with the BO prior to securing excess AE equipment and in-flight kits.

20.9.11.1. During preflight, the Charge Medical Technician (CMT) will provide the BO with equipment weights using AMC Checklist Insert Guide and provide weights per pallet.

20.9.12. Pallet end stops protrude into egress paths. Remove forward and aft pallet end stops once PSPs are locked in place. The BO will reinstall pallet end stops prior to unlocking PSPs.

20.9.13. Enplaning/Deplaning. Air stairs are the preferred method to enplane/deplane ambulatory patients. If litter patients are on board, use the High Deck Patient Loading Platform (HDPLP) or the Patient Loading System (PLS) to enplane/deplane all litter and ambulatory patients. Maximum PLS weight capacity is 1500 lbs. If the HDPLP or PLS is not available, request MHE support (Halverson Lift, Tunner, Hi-lift truck). Planning must take into consideration the limitation of MHE platforms, i.e., exposure to weather, loading time, loading considerations).

20.10. Passengers and Cargo.

20.10.1. The PIC, with the concurrence of the MCD, will ensure maximum aircraft utilization for passengers. Passenger restrictions based upon patient considerations will be identified when seats are released. The PIC will advise the appropriate C2 agency of the number seats available for passengers.

20.10.2. Do not move ambulatory patients to litters in order to provide seating for additional patients or passengers.

20.10.3. For patient comfort and to permit inflight rest for patients use the following for missions over 4 hours in duration:

20.10.3.1. Minimum of 2 litters must be available for ambulatory patients.

20.10.3.2. One seat must be reserved for every 3 litter patients.

20.10.4. An emergency litter will be set up on all AE missions.

20.10.5. Portable Therapeutic Liquid Oxygen (PT LOX) may be transported for positioning and depositioning of Operational/contingency support AE Missions.

20.10.6. A maximum of 25 PT LOX serviced units may be transported simultaneously without Hazmat certification. Processing through aerial port is not required. If shipping more then six PTLOX containers as cargo, do not cover the containers with plastic. This will prevent potential accumulation of high oxygen concentration levels. ***WARNING:*** Ensure the cargo floor is free from any oil or petroleum products.

20.10.7. Hazardous cargo will not normally be transported aboard AE missions.

20.11. Crash/Fire/Rescue (CFR).

20.11.1. Aircraft carrying patient(s) will be provided CFR protection per T.O. 00-25-172. Stand-by CFR vehicle is not necessary during normal operations however, a CFR vehicle will be available upon request. The flight crew will coordinate CFR requirements.

20.11.2. At non-AMC bases, non-U.S. military bases, and civilian airfields, the controlling agency will coordinate CFR coverage, as necessary. The request for CFR vehicle coverage may be denied. This will not prevent refueling operations from occurring.

20.11.3. Do not use MHE or PLS during ground evacuations as they may interfere with CFR.

20.12. AE Call Sign/Use of Priority Clearance

20.12.1. AIREVAC Priority. The PIC may request "AIREVAC priority" for preferential ATC handling if a delay will affect a patient‘s well being. PICs will request priority handling if AE missions are experiencing long delays during takeoff or landing phases, which will affect a patient‘s condition.

20.12.1.1. The PIC needs to consider cabin temperature control during preflight, taxi, and flight when determining the need to request AIREVAC priority handling throughout all phases of the mission.

20.13. Load Message.

20.13.1. At military bases, the flight crew will pass inbound load messages to the proper command and control personnel. At civilian airfields, notify ground control.

20.14. ERO Procedures. Not authorized.

20.15. Aerial Refueling (AR).

20.15.1. Aerial refueling may be required when patients are on board. Unplanned aircraft attitudes can take place during AR, which can affect patient care. Prior to a planned AR, all patients should be screened by a validating flight surgeon to ensure they can tolerate AR.

20.15.2. All personnel will be seated with seat belts fastened during AR. If urgent patient care is necessary, AECMs may stand to resolve the situation.

20.15.3. Practice emergency separations are prohibited on AE missions while patients are on-board.

20.16. Aircraft Systems and Equipment.

20.16.1. Electrical Power. Electrical power for 400Hz medical equipment is provided by an approved pigtail (P/N 8564034-135) located in the Electrical Cord Assembly Set (ECAS). Electrical power for 60 Hz medical equipment is provided by use of a modified Avionics Frequency Converter and Adaptive Electrical Pigtail (P/N 041238). Connect to KC-135 110v, 400 Hz cannon plug receptacle (# 3 receptacle – KC-135E, galley outlet – KC-135R and T).

20.16.1.1. Secure all ECAS connections with plastic tie-straps, including medical equipment plugs at the terminal end of the ECAS and AC electrical extension cord. To ensure stability of wires, secure the portion of the ECAS cord closest to the pigtail to a non-moving aircraft part.

20.16.1.1.1. Plastic tie-straps should be 15 inches in length to adequately cover all circumferences.

20.16.1.2. Use only "modified" Avionics Frequency Converters which are easily identified with a black on orange placard on the top of the unit with the statement: "Approved for Use in a Fuel Vapor Environment, Contract No. F41622-01-D-0001, DO 5010."

20.16.1.3. On KC-135R and T model aircraft, utilize the galley outlet receptacle. To supply power to AE equipment the aircraft galley oven power cord must be disconnected. The ECAS pigtail (P/N 8564034-135 or P/N 041238) is plugged into this same receptacle.

20.16.1.4. On KC-135E model aircraft, an older P-22 Auxiliary Power Panel with 8 receptacles is used. Ensure the ECAS pigtail is plugged into **ONLY** the #3 receptacle.

20.16.1.4.1. All other receptacles Do Not provide power in flight and will result in equipment failure.

20.16.1.5. Coordinate with BO to disconnect galley electrical power and pulling of circuit breaker before connecting the pigtail adaptor to the aircraft. Home station maintenance will lock out/tag all incompatible power receptacles and document in AF Form 781.

20.16.1.6. Once the AECM has secured all electrical connections, coordinate with the BO to reset circuit breakers prior to powering on any medical equipment.

20.16.2. Ensure equipment is turned-off before disconnecting any plugs from ECAS extension outlets in-flight.

20.16.3. Emergency Oxygen for patients will be provided by Emergency Passenger Oxygen System (EPOS).

20.16.4. Flight crews will ensure Life Support Equipment (LSE) is configured IAW AFI 11-302 V1, Table 7, Channel Mission.

20.16.5. AE Crew Oxygen: MA-1 portable oxygen bottles will provide AECMs emergency oxygen. AECMs need not preflight personal oxygen equipment on a pressure demand regulator if they are assigned an MA-1 portable oxygen bottle.

20.16.6. The aircraft should be configured at home station with 5 extra MA-1 portable walk around bottles with harnesses (if available). In the event MA-1 walk-around bottles are not available and the preplanned flight level is below 350, AECMs will use EPOS as an emergency oxygen source.

20.16.7. Latrine. The latrine capacity is limited. This should be taken into consideration for planning procedures. Aircraft will depart home station with an operable latrine and a minimum of two urine tubes and two latrine cartridges (see **Table 6.3**, Latrine Capacity vs. Personnel Loading chart). The CMT will verify the latrine is fully functional when uploading the PSP.

20.16.7.1. AECMs should escort patients to the latrine. Same sex AECM will accompany mental health patients to the latrine to provide supervision.

20.17. Information Collection, Records, and Forms

20.17.1. Information Collection. No information collections are created by this publication.

20.17.2. Adopted Forms:

AF Form 8, *Certificate of Aircrew Qualification*

AF Form 15, *United States Air Force Invoice*

AF Form 72, *Air Report*

AF Form 129, *Tally In-Out*

AF Form 315, *United States Air Force AVFuels Invoice*

AF Form 457, *USAF Hazard Report*

AF Form 523, *USAF Authorization to Bear Firearms*

AF Form 616, *Fund Cite Authorization*

AF Form 651, *Hazardous Air Traffic Report*

AF Form 664, *Aircraft Fuels Documentation Log*

AF Form 711B, *USAF Mishap Report*

AF Form 711GBPA, *Life Science Report of an Individual Involved in an AF Accident/Incident Section B – Missile/Explosives/Nuclear*

AF Form 847, *Recommendation for Change of Publication*

AF Form 1199, *USAF Entry Control Credential*

AF Form 1297, *Temporary Issue Receipt*

AF Form 1631, *NATO Travel Order*

AF Form 1994, *Fuels Issue/Defuel Document*

AF Form 3578, *Tanker Activity Report*

AF Form 4031, *CRM Skills Criteria Training/Evaluation*

AF Form 4044, *KC-135 Cargo/Passenger Planning Data*

AF Form 4075, *Aircraft Load Data Worksheet*

AF Form 4076, *Aircraft Dash 21 Equipment Inventory*

AF Form 4100, *KC-135 Load Planning Worksheet*

AF Form 4112, *KC-135 Restraint Computation Worksheet*

AF Form 4327, *Crew Flight Authorization*

AMC Form 54, *Aircraft Commander's Report on Services/Facilities*

AMC Form 97, *AMC In-Flight Emergency and Unusual Occurrence Worksheet*

AFTO Form 46, *Prepositioned Life Support Equipment*

AFTO Form 781, *ARMS Aircrew/Mission Flight Data Document*

CBP Form 6059B, *Customs and Border Protection Declaration Form, U.S.*

CBP Form 7507, *General Declaration (Outward/Inward)*

DD Form 175, *Military Flight Plan*

DD Form 1801, *DoD International Flight Plan*

DoD Form 2131, *Cargo/Passenger Manifest*

DoD Form 791, *DoD In-Flight Issue Log*

DoD Form 1898, *Aviation Fuels Into-Plane Sale Slip*

DoD Form 365-4, *Weight and Balance Clearance Form F*

Standard Form 44, *Purchase Order-Invoice-Voucher*

20.17.3. Prescribed Forms. No forms are prescribed by this publication.

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DANIEL J. DARNELL, Lt Gen, USAF
DCS, Operations, Plans & Requirements

(AETC)

TIMOTHY M. ZADALIS, Major General, USAF
Director of Intelligence, Operations,and Nuclear Integration

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

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Abbreviations and Acronyms

ACDE—Aircrew Chemical Operations and Procedures

ACF—Acceptance Check Flight

ACO—Airspace Control Order

AECM—Aeromedical Evacuation Aircrew Members

AEOO—Aeromedical Evacuation Operations Officer

AGE—Aircraft Ground Equipment

AFRC—Air Force Reserve Command

AMD—Air Mobility Division

AME—Air Mobility Element

AMT—Air Movement Table

ANG—Air National Guard

AOC—Air Operations Center

AOR—Area of Responsibility

APU—Auxiliary Power Unit

APCC—Aerial Port Control Center

AAR—Air Refueling

ARCT—Air Refueling Control Time

ASRR—Airfield Suitability and Restriction Report

ATC—Air Traffic Control

ATO—Air Tasking Order

ATOC—Air Terminal Operations Center

ATOCONF—Air Tasking Order/Confirmation

BRNAV—Basic Area Navigation Airspace

C2—Command and Control

CARF—Central Altitude Reservation Function

CARU—Canadian Altitude Reservation Unit, Combined Center/Approach Control

CDT—Crew Duty Time

CG—Center of Gravity

CW—Chemical Warfare

CCA—Contamination Control Area

CECR—Crew Enhancement Crew Rest

CFP—Computer Flight Plan

COE—Certification of Equivalency

COMAFFOR—Commander Air Force Forces

CSS—Chief Servicing Supervisor

CVR—Cockpit Voice Recorder

DCS—Defense Courier Service

DIRMOBFOR—Director of Air Mobility Forces

DH—Decision Height

EAL—Entry Access List

EAR—End Air Refueling

EBL—Emergency Boom Latching

ED—Engineering Disposition

EMCON—Emission Option

EPA—Evasion Plan of Action

ETA—Estimated Time of Arrival

ETE—Estimated Time En route

ETIC—Estimated Time in Commission

ETP—Equal Time Point

EUCARF—European Central Altitude Reservation Facility

FCB—Flight Crew Bulletin

FAF—Final Approach Fix

FCF—Functional Check Flight

FCG—Foreign Clearance Guide

FCIF—Flight Crew Information File

FDP—Flight Duty Period

FIR—Flight Information Region

FMC—Fully Mission Capable

FMS—Flight Management System

FOD—Foreign Object Damage

FOL—Forward Operating Location

FRAG—Fragmentary Order

FSO—Flying Safety Officer

GPS—Global Positioning System

HATR—Hazardous Air Traffic Report

ICS—Infant Car Seat

IFF—Identification Friend or Foe

IFM—Integrated Flight Management

INS—Inertial Navigation System

JA/ATT—Joint Airborne/Air Transportability Training

LRC—Long Range Cruise

LPU—Life Preserver Unit

MAF—Mobility Air Forces

MARSA—Military Assumes Responsibility for Safe Altitude

MBL—Manual Boom Latching

MC—Mission Capable

MCD—Medical Crew Director

MDS—Mission Design Series (e.g., KC-135)

ME—Mission Essential

MEL—Minimum Equipment List

MOB—Main Operating Base

MPF—Mission Planning Folder

MNPS—Minimum Navigation Performance Specifications

MSL—Mean Sea Level

NDB—Non Directional Beacon

NEW—Net Explosives Weight

NGB—National Guard Bureau

NM—Nautical Mile

NOTAM—Notice to Airmen

OCF—Operational Check Flight

OIS—Obstacle Identification Surface

OPORD—Operations Order

PACMARF—Pacific Military Altitude Reservation Facility

PDO—Publication Distribution Office

PIC—Pilot In Command

PNF—Pilot Not Flying

PMCR—Post Mission Crew Rest

PPR—Prior Permission Required

PMSV—Pilot to Meteorologist Service

PSN—Proper Shipping Name

PSP—Patient Support Pallet

RNP—Required Navigation Performance

ROE—Rules of Engagement

RRFL—Required Ramp Fuel Load

RVSM—Reduced Vertical Separation Minimum

SAAM—Special Assignment Airlift Mission

SID—Standard Instrument Departure

SIGMET—Significant Meteorological Information

SPR—Single Point Refueling

SPINS—Special Instructions

STM—Supplemental Training Mission

TOLD—Take off and Landing Data

Terms--The following is a list of common mobility terms and associated abbreviation. Additional terms common to the aviation community may also be found in FAR, Part 1 and DoD FLIP General Flight Planning, Chapter 2.

Advanced Computer Flight Plan (ACFP)—An Air Force level system which is the follow on replacement for the Optimized AMC Flight Plan (formerly Jeppesen). The system brings an improved user interface to the customer, runs in Microsoft Windows, and communicates with a mainframe located at Scott AFB IL. Once the optimized flight plans are produced on the mainframe, they are transmitted back to the Window‘s PC.

Advanced Echelon (ADVON)—In advance of the main force, the initial group prepares for the reception of aircraft and personnel; also a small group that serves as liaison between the command and the supported command.

Aeromedical Evacuation (AE)—Movement of patients under medical supervision between medical treatment facilities (MTFs) by air transportation.

Aeromedical Evacuation Coordination Center (AECC)—A coordination center, within the Joint Air Operations Center, which monitors all activities related to aeromedical evacuation (AE) operations execution. It manages the medical aspects of the AE mission and serves as the net control station for AE communications. It coordinates medical requirements with airlift capability, assigns medical missions to the appropriate AE elements, and monitors patient movement activities.

Aeromedical Evacuation Crew member (AECM)—Qualified Flight Nurse (FN) and Aeromedical Evacuation Technician (AET) performing AE crew duties.

Aeromedical Evacuation Operations Officer (AEOO)—Medical Service Corps (MSC) officer or medical administrative specialist or technician (AFSC 4A0X1) assigned to the AE system to perform duties outlined in applicable Air Force policy directives, instructions, 41-series handbooks, and this AFI.

Aeromedical Readiness Mission (ARM)—Training missions using simulated patients to prepare for the wartime/contingency movement of patients.

Air Force Mission Support System (AFMSS)—Provides the Air Force with common interoperable automated flight mission planning hardware and software. Consists of a ground and portable (laptop) system. Interfaces with theater, MAJCOM, and joint data bases from fixed or deployed locations worldwide. Automates previously manually accomplished tasks. Passes Air Tasking order through C2IPS or CTAPS. Threats are provided via the Combat Intel System. AFMSS is multimedia capable with modem provided on ground and portable systems. The portable has a 1553B interface bus for uploading data to the aircraft. AFMSS displays and prints

full color charts, NITF imagery, perspective views, mission rehearsals, 3-D fly through, flight planning forms and logs, and Digital Aeronautical Flight Information File information. Uses industry standardized databases and complies with open-system architecture and multilevel security requirements. Built with Commercial Off-The-Shelf (COTS) hardware, and implements nonproprietary software.

Air Force Satellite Communication (AFSATCOM)—Satellite communications system capable of 75 bits per second (BPS) record message traffic.

Air Force Component Commander (AFCC)—In a unified, sub-unified, or joint task force command, the Air Force commander charged with the overall conduct of Air Force air operations.

Airlift—Aircraft is considered to be performing airlift when manifested passengers or cargo is carried.

Air Mobility Control Center (AMCC)—Provides global coordination of tanker and airlift for AMC and operationally reports to the AMC 618 TACC. Functions as the AMC agency that manages and directs ground support activities and controls aircraft and aircrews operating AMC strategic missions through overseas locations.

Air Mobility Operations Control Center (AMOCC)—Operations center which controls movement of theater assigned air mobility assets.

Air Mobility Element (AME)—Command and control center deployed in theater where detailed planning, coordinating, and tasking for theater tanker and airlift operations are accomplished. The AME receives direction from the director, mobility forces (DIRMOBFOR). The AME is the focal point for communications and the source of control and direction for theater tanker and airlift forces.

Air Refueling Control Point (ARCP)—The planned geographic point over which the receiver(s) arrive in the observation/pre-contact position with respect to the assigned tanker.

Air Refueling Exit Point (AR EXIT PT)—The designated geographic point at which the refueling track terminates. In a refueling anchor it is a designated point where tanker and receiver may depart the anchor area after refueling is complete.

Air Refueling Initial Point (ARIP)—A point located upstream from the ARCP at which the receiver aircraft initiates a rendezvous with the tanker.

Air Reserve Component (ARC)—Refers to Air National Guard (ANG) and Air Force Reserve Command (AFRC) forces, both Associate and Unit-Equipped.

Air Route Traffic Control Center (ARTCC)—A facility that provides Air Traffic Control (ATC) services to aircraft operating on IFR flight plans within controlled airspace, principally during the en route phase of flight.

Air Traffic Control (ATC)—A service provided by an appropriate authority to promote the safe, orderly and expeditious use of the air transportation system and to maximize airspace utility.

Aircrew Chemical Defense Ensemble (ACDE)—Individually fitted aircrew unique chemical protective equipment for the sole purpose of protecting aircrew while flying into and out of a chemically contaminated environment.

AMC History System (AHS)—Database that compiles and stores tanker activity input by line units.

Assembly Staging Base—. The base where tanker aircraft composing the task force assembles.

Augmented Crew—Basic aircrew supplemented by additional qualified aircrew members to permit in-flight rest periods.

Aviation Into-Plane Reimbursement (AIR) Card—A credit card that can be used to purchase aviation fuels, related fuel supplies and ground services at commercial airports where no DoD or Canadian Into-Plane contract exists.

Bird Aircraft Strike Hazard (BASH)—An Air Force program designed to reduce the risk of bird strikes.

Bird Watch Condition (BWC) Low—Normal bird activity [as a guide, fewer than 5 large birds (waterfowl, raptors, gulls, etc.) or fewer than 15 small birds (terns, swallows, etc)] on and above the airfield with a low probability of hazard. However, a single bird in a critical location may elevate the BWC to moderate or severe.

Bird Watch Condition (BWC) Moderate—Increased bird population (approximately 5 to 15 large birds or 15 to 30 small birds) in locations that represent an increased potential for strike. However, could be caused by only a single bird in a critical location.

Bird Watch Condition (BWC) Severe—High bird population (as a guide, more than 15 large birds or 30 small birds) in locations that represent an increased potential for strike. However, could be caused by only a single bird in a critical location.

Block Time—Time determined by the scheduling agency responsible for mission accomplishment for the aircraft to arrive at (block in) or depart from (block out) the parking spot.

BLUE BARK—US military personnel, US citizen civilian employees of the Department of Defense (DoD), and the dependents of both categories who travel in connection with the death of an immediate family member. It also applies to escorts for dependents of military members traveling under competent orders.

Border Clearance—Those clearances and inspections required to comply with federal, state, and local agricultural, customs, immigration, and immunizations requirements.

Category I Route—A Cat 1 route is any route on which the position of the aircraft cannot be accurately determined by the overhead crossing of a radio aid at least once each hour with positive course guidance between such radio aids.

Category II Route—Any route on which the position of the aircraft can be accurately determined by the overhead crossing of a radio aid (NDB, VOR, TACAN) at least once each hour with positive course guidance between such radio aids.

Chalk Number—Number given to a complete load and to the transporting carrier.

Charge Medical Technician (CMT)—AET responsible for ensuring completion of enlisted aeromedical crew duties.

COIN ASSIST—Nickname used to designate dependent spouses accompanying dependent children and dependent parents of military personnel reported missing or captured who may travel space available on military aircraft for humanitarian purposes on approval of the Chief of

Staff, United States Army; Chief of Staff, United States Air Force; Chief of Naval Operations; or the Commandant of the Marine Corps.

Combat Control Team (CCT)—see **Special Tactics Team (STT)**.

Command and Control (C2)—Exercise of direction and authority over assigned forces by a properly designated command echelon in the accomplishment of the mission.

Command and Control (C2) Center—Each C2 center provides supervision, guidance, and control within its assigned area of responsibility. For the purpose of this AFI, C2 centers include operations centers, local AMC C2s, air mobility elements, tanker airlift control elements (TALCE), air mobility control centers, unit command posts, and tanker task forces.

Command and Control Information Processing System (C2IPS)—Computer-based information transmission and information handling for command and control functions associated with the Director of Mobility Forces (DIRMOBFOR), AME fixed units, and TALCE. Interfaces to and automatically updates the Global Decision Support System (GDSS).

CONFERENCE SKYHOOK—Communication conference available to help aircrews solve in-flight problems that require additional expertise.

Contingency Mission—Mission operated in direct support of an OPORD, OPLAN, disaster, or emergency.

Critical Phase Of Flight—Takeoff, air refueling, approach, or landing.

Deadhead Time—Duty time for crewmembers positioning or de-positioning for a mission or mission support function.

Department of Defense Activity Address Code (DoDAAC)—A six-position, alpha-numeric code assigned to identify the unit, activity, or organization within DoD that owns the aircraft.

Designated Courier—Officer or enlisted member in the grade of E-5 or above of the US Armed Forces, or a Department of State diplomatic courier, selected by the Defense Courier Service (DCS) to accept, safeguard, and deliver DCS material as directed. A primary aircrew member should be used as a courier only as a last resort.

Desolate Terrain Missions—Any mission in excess of one hour over desert, tropical, or jungle terrain (not to include flights conducted over the CONUS).

Deviation—A deviation occurs when takeoff time is not within -20/+14 minutes of scheduled takeoff time.

Direct Instructor Supervision—Supervision by an instructor of like specialty with immediate access to controls (for pilots, the instructor must occupy either the pilot or copilot seat).

Director, Mobility Forces (DIRMOBFOR)—Individual responsible for theater mobility force management. The Air Force component commander exercises operational control of assigned or attached mobility forces through the DIRMOBFOR. The DIRMOBFOR monitors and manages assigned mobility forces operating in theater. The DIRMOBFOR provides direction to the Air Mobility Division in the AOR to execute the air mobility mission and will normally be a senior officer familiar with the AOR.

Distinguished Visitor (DV)—Passengers, including those of friendly nations, of star or flag rank or equivalent status, to include diplomats, cabinet members, members of Congress, and other

individuals designated by the DoD due to their mission or position (includes BLUE BARK and COIN ASSIST).

Double Blocking—When an aircraft is required to block-in at one parking spot, then move to normal parking for final block-in. The extra time required for double blocking will be taken into account during mission planning/scheduling. To compensate for double blocking on departure, the aircrew "legal for alert time" may be adjusted to provide additional time from aircrew "show time" to departure. When double blocking is required on arrival, the aircrew‘s entry into crew rest will be delayed until postflight duties are complete.

Dual Role—Any mission where both air refueling and airlift are provided to the user. Primary mission role is normally air refueling. Missions where cargo movement is primary require a dedicated funded special assignment airlift mission (SAAM).

Due Regard—Operational situations that do not lend themselves to International Civil Aviation Organization (ICAO) flight procedures, such as military contingencies, classified missions, politically sensitive missions, or training activities. Flight under "Due Regard" obligates the PIC to be his or her own air traffic control (ATC) agency and to separate his or her aircraft from all other air traffic. See FLIP General Planning, sec. 7.

Employment Base—Base or airfield normally in the forward area from which combat operations are flown; may be a main base (MB), limited base (LB), or standby base (SB).

Equal Time Point (ETP)—Point along a route at which an aircraft may either proceed to destination or first suitable airport or return to departure base or last suitable airport in the same amount of time based on all engines operating.

Estimated Time In Commission (ETIC)—Estimated time required to complete required maintenance.

Execution—Command-level approval for initiation of a mission or portion thereof after due consideration of all pertinent factors. Execution authority is restricted to designated command authority.

Familiar Field—An airport in the local flying area at which unit assigned aircraft routinely performs transition training. Each operations group commander will designate familiar fields within their local flying area.

Forced Rendezvous Point (FRP)—Navigational checkpoint over which formations of aircraft join and become part of the main force.

Fuel Reserve—Amount of usable fuel that must be carried beyond that required to complete the flight as planned.

Global Decision Support System (GDSS)—AMC‘s primary execution command and control system. GDSS is used to manage the execution of AMC airlift and tanker missions.

Global Patient Movement Requirements Center(GPMRC)—A joint activity reporting directly to the Commander in Chief, US Transportation Command, the Department of Defense single manager for the regulation of movement of uniformed services patients. The Global Patient Movement Requirements center authorizes transfers to medical treatment facilities of the Military Departments or the Department of Veterans Affairs and coordinates intertheater and

inside continental United States patient movement requirements with the appropriate transportation component commands of US Transportation Command.

Ground Time—Interval between engine shut down (or arrival in the blocks if engine shutdown is not scheduled) and next takeoff time.

Hazardous Cargo or Materials (HAZMAT)—Articles or substances that are capable of posing significant risk to health, safety, or property when transported by air and classified as explosive (class 1), compressed gas (class 2), flammable liquid (class 3), flammable solid (class 4), oxidizer and organic peroxide (class 5), poison and infectious substances (class 6), radioactive material (class 7), corrosive material (class 8), or miscellaneous dangerous goods (class 9). Classes may be subdivided into divisions to further identify hazard, i.e., 1.1, 2.3, 6.1, etc.

Instructor Supervision—Supervision by an instructor of like specialty. For critical phases of flight, the instructor must occupy one of the seats or stations, with immediate access to the controls.

Interfly—The exchange and/or substitution of aircrews and aircraft between Mobility Air Forces (MAF) including crewmembers and/or aircraft from AMC, AETC, ACC, PACAF, USAFE, and AMC-gained ANG and AFRC forces.

In-Place Time (IPT)—Time when an aircraft and crew are at an operating base and prepared to load for the mission.

Joint Airborne/Air Transportability Training (JA/ATT)—Continuation and proficiency combat airlift training conducted in support of DoD agencies. Includes aircraft load training and service school support. AMC headquarters publishes JA/ATT tasking in AMC OPORD 17-76, annex C, appendix 1.

Loading Time—Specific time established jointly by the commanders concerned when aircraft loading will begin.

Local Training Mission—A mission scheduled to originate and terminate at home station (or an off-station training mission), generated for training or evaluation, and executed at the local level.

Maintenance Status:—

A-1—No maintenance required.

A-2 (Plus Noun)—Minor maintenance required, but not serious enough to cause delay. Add nouns that identify the affected units or systems, i.e. hydraulic, ultra high frequency (UHF) radio, radar, engine, fuel control, generator, boom or drogue, etc. Attempt to describe the nature of the system malfunction to the extent that appropriate maintenance personnel will be available to meet the aircraft. When possible, identify system as mission essential (ME) or mission contributing (MC).

A-3 (Plus Noun)—Major maintenance. Delay is anticipated. Affected units or systems are to be identified as in A-2 status above.

A-4—Aircraft or system has suspected or known biological, chemical, or radiological contamination.

Medical Crew Director (MCD)—FN responsible for supervising patient care and AEMCs assigned to AE missions. On missions where a FN is not onboard, the senior AET will function as MCD.

Mission—Movement of aircraft from a designated point of origin to a designated destination as defined by assigned mission identifier, mission nickname, or both in the schedule, mission directive, OPORD, OPLAN, or FRAG order.

Mission Advisory—Message dispatched by command and control agencies, liaison officers, or ACs advising all interested agencies of any changes in status affecting the mission.

Mission Clinical Coordinator (MCC)—A qualified MCD or CMT, in addition to the basic crew and instructors and flight examiners. Responsible for coordinating training activities on ARMS.

Mobility Air Force (MAF)—Forces assigned to mobility aircraft or MAJCOMs with operational or tactical control of mobility aircraft.

Mobility Readiness Spares Package (MRSP)—An air transportable package of aircraft spares to support various KC-135 operations.

Multipoint Refueling System (MPRS)—Refers to aircraft modified with TCTO 628, which allows offload of fuel in-flight from either of two wing tip mounted air refueling (AR) pods.

Off Station Training Flight—A training flight that originates or terminates at other than home station that is specifically generated to provide the aircrew experience in operating away from home station. Off station trainers will not be generated solely to transport passengers or cargo.

Operational Control (OPCON)—Functions of command and control involving composition of subordinate forces, authority to approve allocation of assets to specific missions, assignment of tasks, designation of objectives, and authoritative direction necessary to accomplish the mission. This is a higher authority than the command that performs specific mission functions.

Operational Necessity—A mission associated with war or peacetime operations in which the consequences of an action justify the risk of loss of aircraft and crews.

Operational Risk Management (ORM)—ORM is a logic-based, common sense approach to making calculated decisions on human, materiel, and environmental factors before, during, and after Air Force operations. It enables commanders, functional managers and supervisors to maximize operational capabilities while minimizing risks by applying a simple, systematic process appropriate for all personnel and Air Force functions.

Operational Missions—Missions executed at or above 618 TACC level. Operational missions termed "CLOSE WATCH" include CORONET missions and AFI 11-221, *Air Refueling Management (KC-10 and KC-135)*, priority 1, 2, and 3 missions tasked by the 618 TACC. Other operational missions such as deployment, re-deployment, reconnaissance operations, operational readiness inspections (ORI), AMC channel or SAAM, and JA/ATT missions may be designated "CLOSE WATCH" as necessary.

Operations Order (OPORD)—Directive from a commander to subordinate commanders to announce the plan, state intentions, provide necessary information and instructions for a situation and assign specific tasks to subordinate commands.

Operations Plan (OPLAN)—A plan for a single or a series of connected operations to be carried out simultaneously or in succession, based on stated assumptions; a directive to permit subordinate commanders to prepare supporting plans and orders.

Opportune Airlift—Transportation of personnel, cargo, or both aboard aircraft with no expenditure of additional flying hours to support the airlift.

Originating Station—Base from which an aircraft starts on an assigned mission. May or may not be the home station of the aircraft.

Over water Flight—Any flight that exceeds power off gliding distance from land.

Patient Movement Categories:

Urgent—Patients who must be moved immediately to save life, limb, or eyesight, or to prevent complication of a serious illness.

Priority—Patients requiring prompt medical care that must be moved within 24 hours.

Routine—Patients who should be picked up within 72 hours and moved on routine/scheduled flights.

Permit to Proceed—Aircraft not cleared at the first US port of entry may move to another US airport on a permit to proceed issued by customs officials at the first port of entry. This permit lists the requirements to be met at the next point of landing, i.e. number of crew and passengers, cargo not yet cleared. PIC are responsible to deliver the permit to proceed to the customs inspector at the base where final clearance is performed. (Heavy monetary fines can be imposed on the PIC for not complying with permit to proceed procedures.)

Point Of No Return—Most distant point along the planned route from which an aircraft may safely return to its point of departure or alternate airport with approach and landing fuel.

Point of Safe Return—Most distant point along the planned route from which an aircraft may safely return to its point of departure or alternate airport with required fuel reserve.

Positioning and De-positioning Missions—Positioning missions are performed to relocate aircraft for the purpose of conducting a mission. De-positioning missions are made to return aircraft from bases at which missions have terminated.

Quick Stop—Set of procedures designed to expedite the movement of selected missions by reducing ground times at en route or turnaround stations.

Ramp Coordinator—Designated representative of the C2 center whose primary duty is the coordination of ground handling activities on the ramp during large-scale operations.

Readiness Spares Package (RSP)—An air deployable package of selected spares to support a specific mission, operation, or aircraft model design series (MDS).

Scheduled Return Date (SRD)—Scheduling tool used by units to predict when crews will return to home station. It allows force managers to plan aircrew availability and provide crews visibility over monthly flying activities. AMC and AMC-gained aircrews (except those on standby at home station) will have an SRD established on their flight orders.

Scheduled Takeoff Time—Takeoff time is established in the schedule or OPORD. For air aborts and diversions, this will be engine shut down time (or arrival in the blocks if engine

shutdown is not scheduled) plus authorized ground time. Early deviation does not apply to aborts or diversions unless the mission is formally rescheduled by current operations. Scheduled takeoff time may be adjusted to make good an ARCT. Notify controlling agency prior to takeoff to adjust the scheduled takeoff time.

Section—Subdivision of a formation. A section normally consists of 6 aircraft (2 elements).

Serial—Normally consists of 12 aircraft (2 sections or 4 elements).

Significant Meteorological Information (SIGMET)—Area weather advisory issued by an ICAO meteorological office relayed to and broadcast by the applicable ATC agency. SIGMET advisories are issued for tornadoes, lines of thunderstorms, embedded thunderstorms, large hail, severe and extreme turbulence, severe icing, and widespread dust or sand storms. SIGMETs frequently cover a large geographical area and vertical thickness. They are prepared for general aviation and may not consider aircraft type or capability.

Special Assignment Airlift Mission (SAAM)—Funded airlift that cannot be supported by channel missions because of the unusual nature, sensitivity, or urgency of the cargo or that requires operations to points other than the established channel structure.

Special Operations Air Refueling (SAOR)—Air refueling operations in support of special operations forces.

Special Tactics Team (STT)—Team of Air Force personnel organized, trained, and equipped to establish and operate navigational or terminal guidance aids, communications, and aircraft control facilities in support of combat aerial delivery operations.

Stations Time (Air Force)—Normally, 30 minutes prior to takeoff time for the KC-10, KC-135, C-130, C-141, and OSA aircraft (45 minutes for C-5 and C-17). Aircrews will have completed their preflight. duties and be at their crew positions. Passengers will be seated and cargo will be secured.

618 Tanker Airlift Control Center (618 TACC)—Operations center that controls tanker and airlift forces worldwide through a network of computer systems. The 618 TACC is organized into geographic cells consisting of East, West, and Emergency Action Cells. The 618 TACC contains the following functions: Mobility Management, Global Channel Operations, Operations Management, Current Operations, Global Readiness, Weather, Logistics Readiness Center, Aerial Port Control Center, International Clearances, and Flight Plans.

Tactical Event—Formation and threat avoidance approaches/departures (TAA/D).

Tanker Airlift Control Element (TALCE)—Team of qualified Air Force personnel established to control, coordinate, and function as an Air Force tanker and airlift C2 facility at a base where normal AMC C2 facilities are not established or require augmentation. TALCEs support and control contingency operations on both a planned and no-notice basis.

Tanker Task Force (TTF)—Force of tanker aircraft assembled and tasked to perform a specific function.

Theater Patient Movement Requirements Center (TPMRC)—The TPMRC is responsible for theater wide patient movement (e.g., medical regulating and AE scheduling), and coordinates with theater MTFs to allocate the proper treatment of assets required to support its role. The primary role of the TPMRC is to devise theater plans and schedules and then monitor their

execution in concert with the GPMRC. The TPMRC is responsible to the Combatant Commander through the Combatant Command Surgeon. The TPMRC is also responsible for all aspect of intratheater patient movement management. A TPMRC provides command and control for patient movement management operations in its theater of operations, as directed by its Combatant Commander's operational policy, and in coordination with USTRANSCOM, acting as a supporting combatant command, responsible for intertheater and CONUS patient movement.

Time Out—Common assertive statement used to voice crewmember concern when safety may be jeopardized.

Training Mission—Mission executed at the unit level for the sole purpose of aircrew training for upgrade or proficiency. Does not include operational missions as defined in this AFI.

Transportation Working Capital Fund (TWCF)—Formerly known as Defense Business Operations Fund-Transportation (DBOF-T). Part of the Air Force Working Capital Fund (AFWCF). Normally used to cover costs that can be recovered from customers. Examples include TDY costs, site surveys of TALCE or airlift unit deployment bed down locations, airlift unit level mission planning expenses, and support or contract costs for deployed TWCF units/personnel.

Unilateral—Operations confined to a single service.

Unit Move—A mission airlifting military passengers or troops who originate from the same unit and onload point, are under the control of a designated troop commander, and offload at the same destination.

Unit Type Code (UTC)—A 5-letter or -digit combination code used to identify standard deployment packages of personnel and equipment in a data automation environment.

Zero Fuel Weight—Weight, expressed in pounds, of a loaded aircraft not including wing and body tank fuel. All weight in excess of the maximum zero fuel weight will consist of usable fuel.

Attachment 1 (AETC)

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

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Prescribed Forms

This publication does not prescribe any forms.

Forms Adopted

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

OST—Off-Station Trainer