DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON, DC

AFI 11-2C-130JV3_AFGM 2016-01
29 June 2016

MEMORANDUM FOR DISTRIBUTION C

FROM: HQ USAF/A3

SUBJECT: AFI 11-2C-130J Volume 3, C-130J Operations Procedures, Guidance Memorandum.

1. By Order of the Secretary of the Air Force, this Guidance Memorandum immediately implements changes to AFI 11-2C-130J Volume 3, C-130J Operations Procedures, providing fuel guidance and stabilized approach procedures for C-130J aircrew members. Compliance with this memorandum is mandatory. To the extent its directions are inconsistent with other Air Force publications, the information herein prevails IAW AFI 33-360, Publications and Forms Management.

2. Make changes to the following paragraphs:

(Change) 5.12. Stabilized Approach (T-1). Unstable approaches are primary contributors to numerous military and civilian mishaps. Stabilized approaches are essential for the safe operation of aircraft and are mandatory. The following criteria define specific parameters that mitigate risk during this critical phase of flight. This philosophy requires aircrew to take immediate corrective actions to stabilize the approach when outside designated parameters. Although tactical approaches are inherently less constrained, they must still result in the aircraft arriving at a position in space in an appropriate configuration and within acceptable parameters that will permit a safe landing consistent with aircraft flight manual restrictions as well as performance manual assumptions and limitations.

(Change) 5.12.1. The following stabilized approach criteria applies to all approaches and will be emphasized and briefed for every approach:

(Change) 5.12.1.1. Aircraft is in landing configuration. Final flap configuration may be delayed but will be briefed.

(Delete) 5.12.1.1.1. – 5.12.1.1.5.

(Change) 5.12.1.2. Airspeed is appropriate for the configuration and conditions, or as instructed by ATC.

(Delete) 5.12.1.2.1. – 5.12.1.2.5.

(Add) 5.12.1.3. S ink rate is no greater than 1000 fpm. NOTE: Under certain conditions (wx, terrain, etc.) some approaches may require greater than a 1000 fpm descent rate. This increased sink rate will be briefed.

(Add) 5.12.1.4. All briefings and checklists are complete unless contrary to T.O. guidance.

(Add) 5.12.1.5. Aircraft is on the correct track.

(Add) 5.12.1.6. Aircraft is in the correct bank angle to maintain proper approach track for instrument, circling, or visual approach.

(Add) 5.12.1.7. Power set to maintain the descent profile at approach speed.

(Add) 5.12.1.8. Momentary minor corrections or deviations are acceptable and defined as:

(Add) 5.12.1.8.1. Airspeed: +10/-5 kts from target

(Add) 5.12.1.8.2. Bank Angle: +/- 15 degrees from target

(Add) 5.12.1.8.3. Rate of Descent: +/- 300 FPM from target

(Change) 5.12.2. The following criteria apply to instrument approaches:

(Add) 5.12.2.1. At 1000 feet height above touchdown (HAT), the stable criteria in paragraph 5.12.1 apply.

(Add) 5.12.2.1.1. If these criteria are not met at 1000 feet HAT, the PM will announce the deviation and the PF will take immediate corrective action. PM states “1000, xxxx,” where “xxxx” equates to a concise description of the unstable characteristic(s) which clearly relay to the PF what actions are required to return the aircraft to a stable platform. Example: “1000, 15 fast.” If criteria are met, PM will state “1000, stable.”

(Add) 5.12.2.2. Between 1000 feet HAT and 500 feet HAT:

(Add) 5.12.2.2.1. Parameters are the same as those in paragraph 5.12.1.

(Add) 5.12.2.2.2. If these criteria are not maintained, the PM will announce the deviation using the “xxxx” format (Example: “15 fast”) and the PF will take immediate corrective action.

(Add) 5.12.2.3. At 500 feet AGL:

(Add) 5.12.2.3.1. Parameters are the same as those in paragraph 5.12.1.

(Add) 5.12.2.3.2. If criteria are met, PM will state “500, stable.”

(Add) 5.12.2.3.3. If unstable at 500 feet AGL, the PM will call “Go-Around” and the PF will execute a go-around.

(Add) 5.12.2.4. From 500 feet HAT to the runway, if these parameters are exceeded the PM or any other crewmember will announce “Go-Around” and the PF will execute a go-around.

(Add) 5.12.3. The following criteria apply to visual (including tactical) approaches:

(Add) 5.12.3.1. The PF is required to brief the maneuver parameters prior to execution, to include when to expect the aircraft to be stable and when to go around. The briefed stabilization point and required callout for tactical approaches will be no lower than 150 feet AGL.

(Add) 5.12.3.2. At 300 feet AGL, parameters are the same as those in paragraph 5.12.1. unless briefed by exception.

(Add) 5.12.3.3. If these criteria are not met at 300 feet AGL, the PM will announce the deviation and the PF will take immediate corrective action. PM states “300, xxxx,” where “xxxx” equates to a concise description of the unstable characteristic(s) which clearly relay to the PF what actions are required to return the aircraft to a stable platform. Examples: “300, 15 fast,” or “300, bank angle”. If criteria are met, the PM will state “300-stable.”

(Add) 5.12.3.4. Between 300 feet AGL and 150 feet AGL:

(Add) 5.12.3.4.1. Parameters are the same as those as paragraph 5.12.1.

(Add) 5.12.3.4.2. If these criteria are not maintained, the PM will announce the deviation using the “xxxx” format (Example: “15 fast”) and the PF will take immediate corrective action.

(Add) 5.12.3.5. At 150 feet AGL:

(Add) 5.12.3.5.1. Parameters are the same as those as paragraph 5.12.1.

(Add) 5.12.3.5.2. If criteria are met, PM will state “150, stable.”

(Add) 5.12.3.5.3. If unstable at 150 feet AGL, the PM will call “Go-Around” and the PF will execute a go-around.

(Add) 5.12.3.6. From 150 feet AGL to the runway, if these parameters are exceeded, the PM or any other crewmember will announce “Go-Around” and the PF will execute a go-around.

(Add) 5.12.4. Descent Planning and Energy Management. Awareness of maneuver entry parameters and energy management is crucial to meeting the stabilized approach criteria on every approach. Aircrews will ensure the aircraft is following the planned descent profile. All non-tactical descents should follow a normal descent profile IAW AFMAN 11-217 procedures and techniques in the absence of ATC or FLIP guidance. All tactical descents should follow published tactical procedures/profiles. When unforeseen interruptions alter the planned descent,

immediately correct any deviations. It may be necessary to hold, request vectors, or take alternate actions in order to comply with the planned descent profile.

(Add) 5.12.5. Visual Transition. It is imperative for aircrews to review the airfield environment. Identify key features such as approach light type, airfield lighting, geographic layout/configuration of runways, taxiways, ramps, etc. To the max extent possible, this study will take place during the crew mission briefing and reviewed again prior to descent.

(Add) 5.12.6. Missed Approach/Go-Around. Aircrews will conduct a thorough briefing for anticipated missed approach/go-around scenarios. This briefing will include a discussion of specific crewmember duties. NOTE: Execute missed approach/go-around IAW -1 and AFMAN 11-217 procedures.

(Change) 11.1.1.5. Equal Time Point (ETP). Point along a route at which an aircraft may either proceed to First Suitable Airfield (FSAF) or return to Last Suitable Airfield (LSAF) in the same amount of time based on all engines operating. FSAF/LSAF are airports closest to the coast out and coast in route of flight that meet applicable destination alternate requirements except weather. Forecast weather conditions for LSAF/FSAF (ETA +/- 1 Hour) will meet or exceed minimums for the lowest compatible approach or 500/1 whichever is greater.

(Change) 11.2.3.1. ETP calculations are required on portions of routes when the total time between the LSAF and the FSAF is 3 hours or more. LSAF and FSAF selected for ETPs calculated in ACFP are authorized for use. Plan to arrive at the recovery airfield with 0+30 minutes reserve fuel at optimal cruise speed for the depressurization transit altitude. ETPs must be annotated and plotted on the MPC and MFP prior to the coast-out waypoint. Enter ETP information into the CNI PROGRESS page during preflight. CNI-computed ETPs only become accurate upon reaching the PERF CRUISE altitude. CNI-computed ETPs can be obtained for different airspeeds (i.e. 260 KTAS for a 3-engine scenario).

(Change) 11.2.3.3.5. Use the formula provided in 11.2.3.4.1. to calculate flight time from ETP to FSAF. Use this time and second-half-averaged GS to calculate distance between FSAF and ETP. The ETP will always occur upwind of geographic midpoint.

DISTANCE (ETP to FSAF) = TIME (ETP to FSAF) * GS (2nd half)

(Add) 11.2.3.4. ACFP selects ETP as the point on the route of flight where the time to travel to either the LSAF or FSAF is equivalent, within a 3-minute tolerance. ACFP ETP calculations use wind data, great circle distances, and cruise and descent times from the ETP to LSAF and ETP to FSAF.

(Add) 11.2.3.4.1. Crews can use the following formula to verify ACFP ETP calculations:

$$\text{TIME in hours (ETP to FSAF)} = \frac{\text{DISTANCE (LSAF to FSAF)}}{(WF2 - WF1) + 2(TAS)}$$

(Change) 14.5.3. For all missions other than local training, calculate an additional 15 minutes of

contingency fuel. Local training missions are not required to carry contingency fuel. If contingency fuel is carried on local training missions, it should not exceed 15 minutes. Contingency fuel is not considered reserve fuel since it can be consumed at any point during the mission. Contingency fuel will be included in the initial required ramp fuel load (RRFL) calculation.

(Change) 14.5.4. ACFP will calculate reserves and contingency fuel as holding fuel. Computer flight plans will have 1+00 holding when combining 0+45 reserve and 0+15 contingency fuel (for remote destinations ACFP will plan 2+00 holding plus 15 minutes contingency).

(Delete) 14.5.6.

(Change) 14.5.8. Minimum landing fuel is 3,000 lbs. This fuel accounts for gauge errors. Do not include this 3,000 lbs of fuel in the 45-minute fuel reserve and 15 minute contingency fuel calculations.

(Change) 14.6. Depressurization Fuel. Additional fuel required to protect the aircraft and occupants in the event of a cabin depressurization followed by an extended diversion to an alternate airport at low altitude where fuel consumption is increased. During all flight portions, crews are to consider the possibility of exercising depressurization procedures**:**

(Change) 14.6.1. Crews will verify ACFP calculated fuel required to a recovery airfield in the event of depressurization at the ETP, to determine if additional fuel must be added. Crews will manually calculate ETP/DF fuel required if ACFP is unavailable.

(Change) 14.6.2. Depressurization fuel will be calculated in ACFP at 10,000 feet MSL. If additional fuel is required from the ETP, then ACFP automatically adds the additional fuel into ACFP block 10.

(Delete) Table 14.1. “CAT I Reserve” row.

(Change) Table 14.1, “Contingency Fuel” row to read:

Contingency Fuel:	15 minutes, using max endurance airspeed at 10,000 ft MSL (20,000 ft MSL for remote fields)

(Change) Figure 14.1 to read:
Line 6: Contingency (0+15)
Line 12: Not Used

(Change) Figure 14.2 to read:
Line 6: CONTINGENCY (15 MIN)
Line 12: NOT USED

(Delete) Table 14.3.

(Change) Attachment 1, Equal Time Point (ETP) Term to read:
Equal Time Point (ETP) - Point along a route at which an aircraft may either proceed to First Suitable Airfield (FSAF) or return to Last Suitable Airfield (LSAF) in the same amount of time based on all engines operating. FSAF/LSAF are airports closest to the coast out and coast in route of flight that meet applicable destination alternate requirements.

3. This memorandum becomes void after one-year has elapsed from the date of this memorandum, or upon publication of an Interim Change or rewrite of the affected publication, whichever is earlier.

4. AMC POC for this C-130J Guidance Memorandum is Lt Col Richard Aguirre, HQ AMC/A3VX, DSN 779-7629, e-mail: richard.aguirre@us.af.mil

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BY ORDER OF THE SECRETARY OF THE AIR FORCE

AIR FORCE INSTRUCTION 11-2C-130J VOLUME 3

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FLYING OPERATIONS

C-130J OPERATIONS PROCEDURES

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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.C-130J, *Combat Aircraft Fundamentals—C-130J*. It establishes policy for the operation of the C-130J aircraft to safely and successfully accomplish worldwide mobility missions. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force. This instruction applies to Air Force Reserve Command (AFRC) and Air National Guard (ANG) units.

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Chapter 1

GENERAL INFORMATION

1.1. General.

1.1.1. This Air Force Instruction (AFI) provides policy for operating the C-130J and WC-130J. 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.

1.1.2. Unit commanders and agency directors involved with or supporting C-130J operations shall make current copies of this AFI available to appropriate personnel. Transportation and Airfield Management 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 C-130J and WC-130J 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 ensure 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 (lead command) as appropriate for follow-on action.

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. Send copies to Owning Command, i.e., if it is an AFRC crew info HQ AFRC A3V.

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 paragraph **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 should send HQ AMC Stan/Eval (lead command) 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.

1.5. 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, *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, **Air Force Publication/Form Action Request**) 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/A3OF 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/A3/DO (if applicable), MAJCOM Stan/Eval and MAJCOM/A3/DO.

1.7. Requisition and Distribution Procedures. Unit commanders shall use AFI 36-161, *Distribution Management* procedures to provide aircrew members and associated support personnel current copies and changes to this AFI.

1.8. Improvement Recommendations. Send comments and suggested improvements to this instruction on an AF Form 847, **Recommendation for Change of Publication**, through channels to HQ AMC/A3V, 402 Scott Drive Unit 3A1, Scott AFB IL, 62225-5302 IAW procedures in AFI 11-215, *Flight Manual Procedures* 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 102, *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) 603 Air Operations Center/Air Mobility Division (AOC/AMD), Africa Command (AFRICOM) 617 AOC/AMD, Air National Guard (ANG) Readiness Center, 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), Tanker Airlift Control Elements (TALCE), 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 Operational Control 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 PIC 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,* or MAJCOM regulation governing OST‘s for procedures and requirements governing OSTs.

2.2.1.1. AFRC Current Operations (AFRC/A3OO) is approval authority for AFRC Unit Equipped 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 pilot may not be designated as PIC. A non-mission ready (NMR) pilot may be designated as PIC, provided the delinquent events causing the NMR status are not performed on that flight. 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. Unscheduled training events (for example, transition training) may be flown after obtaining approval from 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 and accepting aircrew or mission waivers.

2.3.5. Responsible for passing mission progress reports (at least daily) to C2 agents.

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 Personnel (MEP), 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) is suitable. If the alternate becomes unsuitable while en route, the PIC will 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 of the aircraft‘s impending 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. without MAF C2 Agency. Transmit mission data to the controlling C2 agency by any means available (i.e., Defense Switching Network (DSN), high-frequency (HF) radio, and satellite communication (SATCOM), etc.). HF radio is the primary method of communication for routine mission information. For critical C2 communications, i.e. aircraft waiver request, maintenance delay, etc., voice communications is the primary method.

2.5.3. En route Reporting.

2.5.3.1. Make the following en route calls to 618 TACC, as required:

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 (AE) missions, no later than 1 hour prior to landing if a patient condition changes or arrival time is greater than plus or minus 30 minutes from scheduled time.

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 (e.g. HF-Automatic Link Establishment (HF-ALE), SATCOM, Combat Track II (CTII)).

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. Not Used.

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) and request any necessary support.

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, etc.) are the primary method. ***EXCEPTION*:** For AFRC/ANG missions using IFM, AFRC/ANG will provide C2.

2.5.7.1. Position Reporting on IFM missions. IFM missions transiting oceanic flight information regions (FIRs) need to add the phrase ―Pass to Hilda‖ to Air Traffic Control (ATC) position reports.

2.5.7.2. Crews must receive a verbal tactics & intel briefing at the last enroute stop prior to entry into a hostile area/combat zone, provided the capability exists. If no tactics/intel functions are available at the last enroute stop, PICs shall use secure communications (SIPRnet, STU/STE, etc.) to receive this briefing. If unable to comply, the PIC should contact the C2 agency to receive clearance to proceed based on previous intel briefings.

2.5.8. HF Communications. HF is the primary means of access to the worldwide C2 network.

2.5.9. SATCOM Messages and Advisories (when required).

2.5.9.1. On-station Message. Transmit an on-station message at the beginning of each crew duty day.

2.5.9.2. Arrival Advisory. IAW paragraph **2.5.6**

2.5.9.3. Advisories. Transmit mission delay, on/off-load reports.

2.5.10. Not Used.

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

2.5.12. Iridium Phones. Crews are authorized to use Iridium phones with the following restrictions:

2.5.12.1. Limit in-flight phone use to cruise (normally above 10,000 feet AGL) altitude. The phone shall be off during takeoff, climb/departure, descent/approach, and landing phases of flight.

2.5.12.2. Do not transmit on secure radios when the Iridium phone is coupled to the aircraft intercom system using the Iridium Subscriber Unit (ISU). To ensure security of

classified transmissions, disconnect the ISU and Iridium phone from the intercom before using secure radios.

2.5.13. Combat Track II. CTII provides two way, beyond line of sight, secure communication text messaging between multiple ground and airborne nodes. It also provides in-flight following via automatic Global Position System (GPS) position reports displayed on standard digital navigation charts, when installed on the aircraft.

2.5.13.1. Home Station. CTII units at home station are intended for training use only. Unless specifically designated by the C2 agency do not deploy with home station equipment.

2.6. Mission Commander (MC).

2.6.1. Unit commanders shall designate an 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 flight-managed 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 airdrop, or tactical airland operation. For theater airlift missions with more than one airlift unit involved, the theater AOC shall designate a central planning agency responsible for coordinating the entire mission with all involved agencies. The OG/CC for the lead planning agency will designate an MC. The MC will be a rated (normally field grade) officer qualified in the type mission.

2.6.1.2. The MC will ensure all collocated aircrew members attend required briefings.

2.6.1.3. 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. The MC will relay anticipated delays or mission changes to the controlling agency and all non-collocated PICs.

2.7. Not Used.

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	618 TACC PHONE NUMBER DSN/COMMERCIAL
Contingency and Air Refueling	779-0320/618-229-0320
Channel	779-0321/618-229-0321
Joint Airborne/Air Transportability Trainer (JA/ATT)	779-0322/618-229-0322

TYPE OF MISSION	618 TACC PHONE NUMBER DSN/COMMERCIAL
Special Assignment Airlift Missions and Exercises (SAAM)	779-0323/618-229-0323
All Other	779-0324/618-229-0324

2.9. Close Watch Missions. Close Watch missions (i.e. Combat Search and Rescue, AE, PHOENIX BANNERs) receive special C2 attention. PICs will promptly notify the appropriate C2 agency of delays, aborts, or other events that affect on-time departure. Provide the C2 agent with an estimated time in commission (ETIC), planned Estimated Time of Departure (ETD), and estimated time of arrival (ETA) within 10 minutes of the event or as soon as safely possible.

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. 18 AF TACC/XOCL will support all mobility aircraft requests for parts and/or maintenance assistance. Refer to **Table 2.1** for 18 AF 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 this policy 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, and other constraints to safely accomplish the mission tasking. **Table 3.1** summarizes crew position requirements for different crew types.

Table 3.1. Aircrew Complement.

Crew Position	Basic	Augmented	Tactical
Aircraft Commander	1	2 (1)	1
Flight Pilot	1	1	1
Loadmaster	1 (2) (3)	2	2 (4) (5)

NOTES:

(1) The ACs must be qualified in the appropriate mission to be accomplished. Transfer of PIC duties between qualified ACs will be briefed to the crew.

(2) Two loadmasters may be required, at the unit commander‘s discretion, depending on mission complexity. Combat or contingency missions with hostilities require two loadmasters.

(3) Two loadmasters or one loadmaster and another qualified crewmember are required if more than 40 passengers are scheduled to be carried (except during unit moves or contingencies). Both crew members must remain in the cargo compartment, one forward and one aft for takeoffs and landings, or as required by the tactical/emergency situation.

(4) Only one loadmaster is required for tactical missions if any of the situations below apply:

Personnel or door bundle (less than 100 lbs) drops using only one paratroop door.

High altitude (up to 13,000 feet MSL) non-static line personnel are dropped from the ramp and door or, only one paratroop door is opened.

CDS airdrops, including TRIADS.

Dropping only standard airdrop training bundles (SATBs).

A no-drop (dry pass) is planned.

Unilateral heavy equipment training loads utilizing the EPJS.

(5) At SQ/CC discretion, an IL and student fulfills the two loadmaster requirement to drop unilateral training heavy equipment loads without EPJS.

3.2.1. The minimum crew complement for local flights is an aircraft commander, flight pilot, and loadmaster. When a mission requires more than one aircrew member at a position, the SQ/CC will determine whether an instructor and NMR crewmember meet mission requirements.

3.2.2. SQ/CCs shall form augmented aircrews for missions planned to take longer than a basic FDP. Augmenting aircrew members must be current, qualified, and Mission Ready (MR) IAW AFI 11-2C-130J, Vol 1, *C-130J Aircrew Training* (or equivalent). ***EXCEPTION:*** A NMR pilot may augment provided the other two pilots are MR IPs. SQ/CC shall augment an aircrew for the full FDP. The MAJCOM/A3/DO may augment aircrews while the flight is underway.

3.2.3. Tactical Airlift Formation Lead Requirements.

3.2.3.1. Definitions:

3.2.3.1.1. Flight Lead crew: consists of an aircraft commander who is either flight lead certified or is receiving lead upgrade training from an instructor. Can accomplish mission commander duties, lead multiple element formations, and perform element lead duties in a multiple element formation.

3.2.3.1.2. Two-Ship Lead crew: consists of a MR aircraft commander, or an upgrade candidate receiving mission training from an instructor. Can perform lead duties in a single element two-ship formation,

3.2.3.1.3. Deputy Lead crew: a flight lead crew that is ready to assume formation lead duties if the formation lead aborts. A deputy lead is required for formations greater than 3 aircraft. Deputy lead may fly as the number 2 aircraft in the first element or may fly as second element lead as long as no other aircraft occupies the number 2 position.

3.2.3.1.4. An element consists of 2 aircraft. A flight consists of 3 or more aircraft.

3.2.3.2. Unilateral VMC training: No special requirements.

3.2.3.3. Unilateral IMC training and other than unilateral formations:

3.2.3.3.1. Single-element formations. No special requirements.

3.2.3.3.2. Multiple-element formation. A flight lead crew is required in the lead and deputy lead position. If deputy lead aborts after station time, any crew can assume their position with the concurrence of the mission commander. A flight lead crew is required in any element lead position; however, any crew can fly as the last ship of a formation even if it is an element lead position.

3.2.4. NVG Aircrew Complements. Normally, an NVG crew will consist of a NVG certified crewmember in each of the primary crew positions (a crewmember in upgrade supervised by a qualified instructor meets this requirement). The pilots may use NVGs even if the loadmaster is not NVG current/certified. However**,** NVG taxi operations requiring the loadmaster to clear the taxi route/wingtip clearance require a current NVG-certified loadmaster to utilize NVGs.

3.2.5. Joint Precision Aerial Delivery System (JPADS)/Improved Container Delivery System (I-CDS) Aircrew Complement. JPADS/I-CDS crews consist of JPADS certified

basic airdrop crew and a PADS Operator (PO). The PO does not have to be MDS qualified but must be a rated airdrop qualified officer. The PO must be JPADS certified. It is essential the PO receive a thorough ACM briefing prior to performing duties on aircraft other than their primary MDS.

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.

3.4. Pilots. An 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 designate those additional pilots authorized to perform PIC duties. The PIC shall brief the aircrew on the plan to transfer AC 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. ***EXCEPTION:*** A non-current but qualified pilot under direct IP supervision may fly with passengers on board.

3.4.2.1. Pilots shall not fly touch-and-go landings with passengers on board. ***EXCEPTION:*** Touch-and-go and stop-and-go landings are authorized with MEP on board.

3.5. Not Used.

3.6. Loadmasters. A non-current or unqualified loadmaster may serve as a primary aircrew member on any mission when supervised by a qualified instructor or flight examiner (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) – Begins 1 hour after alert notification (or at established report time for self-alerts) and ends at final engine shutdown of the day. SQ/CCs shall form aircrews based on worst-case FDP in the mission directive. Reduce FDP when the autopilot fails 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 both autopilots are inoperative or neither autopilot can be coupled to the Flight Director (FD)). Once an aircrew begins a basic FDP, only MAJCOM/A3/DO may extend to augmented FDP, regardless of aircrew composition (MAJCOM/A3/DO shall augment basic crew to extend FDP).

3.7.1.2. Augmented Crew FDP. Maximum FDP for an augmented aircrew is 18 hours (16 hours when both autopilots are inoperative or neither autopilot can be coupled to the

FD). Only the pilot portion of the crew needs to be augmented when both autopilots are inoperative.

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

3.7.1.4. Training, Tactical, Joint Airborne/Air Transportability Training (JA/ATT), and Functional Check Flights/Acceptance Check Flights (FCFs/ACFs) FDP:

3.7.1.4.1. Maximum FDP for training/tactical/FCF/ACF missions is 16 hours (12 hours when both autopilots are inoperative or neither autopilot can be coupled to the FD). Conduct the mission as follows:

3.7.1.4.2. Complete all mission-related events (i.e., FCF/ACF checks, transition events, or tactical events) during the first 12 hours of the FDP. EXCEPTION: ANG and AFRC crews may perform mission-related events on local training missions up to a 16 hour FDP.

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 20 hours for an augmented aircrew.

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

3.7.3. Except as outlined below, CDT/FDP begins 1 hour after aircrew alert notification. For self-alerts, CDT/FDP begins at established report time. 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. PICs may request CDT/FDP extensions from MAJCOM/A3/DO. C2 agents shall not ask PICs to exercise this option.

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-/off-load, start, and taxi aircraft). Crew rest is required IAW AFI 11-202V3, paragraph **9.7.2**. The duty day begins when the aircrew member reports for official duties.

3.8. Scheduling Restrictions. IAW AFI 11-202V3 *General Flight Rules*. In addition, 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 under the influence of alcohol.

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 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 flight surgeon. 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 HQ 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. 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, climate controlled, 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 (stair-stepped flying 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 [6 hours for ambien (zolpidem) and 4 hours for sonata (zaleplon)]. 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 flight surgeon clearance prior to using no-go pills in the operational environment.

3.9.9.2. Aircrew members shall not operate equipment within the DNIF periods for each of the no-go pills as specified in paragraph **3.9.8** of this instruction.

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 and ambien 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 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. MAJCOM/A3/DO may waive any portion of the crew rest period or ground time as needed to meet mission tasking.

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 at least 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-/off-load, aircrew arming, minor maintenance, or mission debriefing.

3.10.3. Off-station/En route Ground Time. Mobility planners shall provide aircrews at least 16 hours ground time between engine shutdown and subsequent takeoff.

3.10.3.1. Missions planners, PICs, or C2 agents may modify normal 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 on-/off-load, and non-standard mission related duties. C2 agents will not ask PICs to accept less than 16 hours ground time.

3.10.3.2. Mobility planners should construct mission itineraries with en route ground times longer than 16 hours to afford aircrew members opportunities to recover from the cumulative effects 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 should be of minimum duration and are normally used during de-positioning legs. Tasking authorities shall approve PIC 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 to AFRC and ANG).

3.10.5.1. For missions that kept an aircrew off station 16 hours or more, 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. Flying Crew Chief (FCC) Work/Rest Plan. While on Temporary Duty (TDY), the deployed FCC or MEP maintenance technician shall report to the PIC. In conjunction with en route/transient maintenance supervisor, the PIC will determine how long the crew chief can safely perform aircraft maintenance duties. The PIC shall ensure the FCC has sufficient time in each 24-hour period to get 8 hours of uninterrupted rest. See AFI 21-101, *Aerospace Equipment Maintenance Management*, 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 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 site 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 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 3+l5 hours before scheduled takeoff time (allows 1 hour for reporting and 2+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 (i.e. outsized and TO 1C-130J-9 section VI cargo), C2 agents may alert loadmasters up to 2 hours before normal alert time. When early alerting is warranted, the PIC and C2 agent must notify the loadmaster before he/she enters crew rest. Do not alert the loadmaster more than 1 hour before beginning cargo up load. Base the aircrew FDP on the loadmaster‘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 may self-alert with C2 (618 TACC for AMC and AMC-gained missions) concurrence prior to entering crew rest. The PIC must coordinate (618 TACC approval required for AMC and AMC-gained missions) the self-alert time before entering crew rest.

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 flying in deadhead status. 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 PIC determines the overall risk of the mission prohibits safe continuation, he/she will contact the C2 agent and establish a new expected alert time.

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 FSRTs.

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 6 hours for aircraft pre-flight duty prior to crewmembers entering 12 hours of 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 after alert. 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 and lock the crew entrance door with a lock or other controllable device, which will prevent entry without damage to the door or lock. 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 C2 agent is 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 after alert. 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 (AW/CC for ANG and AFRC/AD interfly) or equivalent to permit the exchange or substitution of aircrew members and/or aircraft between mobility units to accomplish flying missions. Normally, interfly should 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). Participating aircrews shall use guidelines established by the lead 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 Mission Design Series (MDS) (aircraft and model), as well as unique systems or configuration required to fly the aircraft/mission. ***EXCEPTION:*** Non-current/unqualified aircrew members under the direct supervision of an instructor may participate in interfly operations.

3.15.2. Aircrew members will follow operational procedures established by the lead command for the MDS. The MC or PIC will brief MAJCOM-specific items.

3.15.3. Each affected OG/CC who commits resources (personnel or aircraft) must concur with interfly proposal.

3.15.4. MDS conversion training.

3.15.4.1. Units may request 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 affected units, duration of agreement, and purpose.

3.16. Not Used.

3.17. Mission Essential Personnel (MEP). Procedures and policies regarding MEP, to include Additional Crewmembers are contained in AFI 11-401 and MAJCOM specific publications (i.e. AMCI 11-208). PICs will ensure personnel traveling in this status are properly authorized.

3.18. Mobility Mission 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. Essential (ME). The PIC will designate an item, system, or subsystem component essential for safe aircraft operation or mission completion 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 sets forth command policy regarding equipment/systems necessary to continue or complete missions after the aircraft is released from the responsible maintenance organization. Equipment/systems not listed in **Table 4.1** through **Table 4.21** shall be considered required for flight without exception. This list cannot anticipate all combinations of failures and contingencies, and is not intended for continued operations, over an indefinite period, with failed or degraded equipment/systems.

4.2.1. PIC Responsibility. PICs must account for the possibility of additional failures when accepting aircraft with inoperative equipment/systems. A PIC who accepts an aircraft with failed or degraded equipment/systems is not committed to subsequent operations with the same failures/degradations. PICs are not committed to operations with failed or degraded equipment accepted by another PIC.

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 of waiver request to include volume, chapter, and 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 managers.

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.

4.3. Waiver Authority. 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. Send info copies to Owning Command, i.e., if it is an AFRC crew send a copy to HQ AFRC 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.

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.

4.4. 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.

4.5.1. Installed - Number of components or systems installed.

4.5.1.1. In some cases, a component can be controlled from either a conventional (hard) panel or from a Communication Navigation Identification Management Unit (CNI-MU) display (soft panel). Similarly, some indications can be viewed on either a hard panel or a soft panel. Since switch functions (or indications) may be duplicated on each of the three CNI-MU displays, the number of switches (or indications) installed may not always be clear. To clarify this condition, switches (or indications) are listed as _1_ in the installed column even when they are duplicated on a soft panel.

4.5.1.2. Although the indications on each pilot‘s Heads Down Displays (HDDs) can be repeated on more than one HDD, repetitions of data in excess of one per pilot are not relevant for flight and are not counted in this MEL. In general, the flight deck is designed to provide one set of data for each (in addition to the standby instruments). Thus, for most HDD indications, the ―number installed‖ is listed as ―2‖, one for each pilot.

4.5.2. Required - The minimum number (quantity) of items required for operation provided the conditions specified in the remarks or exception column are met.

4.5.2.1. Unless otherwise noted, when the item is a switch (or indication) which is duplicated on a soft panel, the number required for dispatch may be satisfied by either the hard panel switch (or indication) or by the switch/indication on one of the associated soft panels. For HDD indications, the _number required_ is _2_ if both pilots must have an indication, _1_ if only one pilot must have an indication and _0_ if neither pilot is required to have the indication.

4.5.3. Remarks and 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.

4.6. Navigation Systems. Chapter 11 lists authorized airspace and procedures for the C-130J. Equipment listed in FLIP for compliance with appropriate airspace is mandatory. Loss of any component before airspace entry requires return to a station with maintenance capability or re-filing via routes permitting operation with degraded equipment.

4.7. Soft Panel Operations.

4.7.1. For partial or complete hard panel failures, aircrews may revert to soft panel operations. Normally, if a soft panel is selected due to hard panel failure, it should be used for the remainder of the flight. Doing so will mitigate the hazards associated with restoring hard panel functionality for an item when the mission computer commanded-state is unknown. Accomplishing the ENGINE SHUTDOWN and BEFORE LEAVING AIRPLANE checklists after the aircraft is parked will ensure the soft panel retains control of the particular item throughout shutdown. In all cases, PICs must consider the increased workload associated with using soft panels.

4.7.2. Hard panel failures may be the result of a physical failure or loss of communication with the mission computer (MC), an aircraft ―reboot‖ may recover hard panel functionality. To determine if hard panel functionality can be regained, the following procedures must be followed in sequential order:

4.7.2.1. Completely power down when accomplishing the BEFORE LEAVING AIRPLANE checklist.

4.7.2.2. Complete all checklist items in the POWER UP checklist. Do not proceed past the POWER UP checklist until it can be determined if the hard panel has recovered. Depending on the system effected (such as APU, bleed air, landing gear, etc.), do not apply bleed air or hydraulics until hard panel functionality can be determined.

4.7.2.3. To determine if a hard panel has recovered, ensure hard panel and soft panel selections/settings are identical. Press the line select key (LSK) to turn the soft panel OFF. If a CNI ―CHK HARD PNL‖ or a referenced hard panel fault ACAWS message (i.e., ―APU PNL FAULT‖, ―DEF SYS PNL FAULT‖, etc.) does not appear, press the ―VERIFY OFF‖ LSK. If feasible, check hard panel functionality.

4.7.2.4. If a CNI ―CHK HARD PNL‖ or a referenced hard panel fault ACAWS message appears, the hard panel has not recovered. The ―CHK HARD PNL‖ message indicates there is a mismatch between the soft panel and hard panel commands to the Mission Computer (MC) independent of physical switch positions. Referenced hard panel fault messages are self-explanatory.

4.7.2.5. If it is determined that the hard panel has not recovered, at the PIC‘s discretion, the mission may continue to a station supporting a repair capability, including en route stops. Do not reselect the hard panel. If a flight must continue under the control of two or more soft panels, a waiver is required.

4.7.3. After returning to home station or repair facility with a hard panel malfunction, aircrews will shut down and turn the aircraft over to logistics personnel for required maintenance actions.

Table 4.1. Air Conditioning and Pressurization.

System Item	Installed	Required	Remarks or Exceptions
Air Conditioning System	2	1	One may be inoperative provided: (1) Cross-flow valve is operative, (2) Associated Flow Control Valve is verified CLOSED, (3) Consideration is given to the type mission, fuel quantity, required cruise altitude and oxygen quantity.
	2	0	Both may be inoperative provided: (1) Both Flow Control Valves are verified CLOSED, (2) Aircraft is operated unpressurized, (3) Auxiliary Vent Valves are operative for ventilation and (4) Consideration is given to required cruise altitude, fuel quantity, OAT and oxygen quantity. **NOTE** Pressurization and both air conditioning systems may be needed if passengers or patients are carried. If a system fails, flight to a destination with repair capability (including enroute stops) may be accomplished (coordinate with the MCD when patients are carried). Passengers and patients will be briefed on the possibility that discomfort may be encountered.

Air Conditioning Control Panel	1	0	May be inoperative provided control is available through the associated soft panel.
a. Automatic Temperature Control System	2	0	May be inoperative provided: (1) Respective Manual Temperature Control System is operative, **OR** (2) Respective Air Conditioning System is considered inoperative, and (3) Temperature control is not required.
b. BA/ECS Channels	2	1	**NOTE** Loss of the 2nd Channel will result in loss of all pneumatic-powered components and systems (except engine anti-ice).
c. Cargo Compartment Recirculation Fan	1	0	See Flight Manual for cooling restrictions.
d. Cross-Flow Valve	1	0	May be inoperative provided both air conditioning systems are serviceable, **OR** Only one air conditioning system is operative and the valve is manually positioned to Cargo Compartment 100% open.
e. Flow Control and Shut Off Valve			
(1) Cargo Compartment Air Conditioning System	1	0	May be inoperative provided: (1) Divider Valve operative, (2) Right Wing Isolation Valve is operative, (3) ECS Cross-flow Valve is operative.
(2) Flight Station Air Conditioning System	1	0	May be inoperative provided: (1) Divider Valve operative, (2) Left Wing Isolation Valve is operative, (3) ECS Cross-flow Valve is operative.
f. Temperature Control Valve	2	0	May be inoperative provided: (1) Valve is failed in the normal temperature range, **OR** (2) Air Conditioning System is considered inoperative.
g. Duct Overheat Temperature Sensor	2	0	May be inoperative provided associated Air Conditioning System is considered inoperative.
Auxiliary Vent Valve, Flight Deck	1	1	
Auxiliary Vent Valve, Cargo Compartment	1	0	

Avionics Cooling System			
a. Avionics Cooling Fans	2	1	
b. Cargo Compartment Avionics Cooling Fans	2	1	
c. Overhead Console Cooling Fans	2	1	If both fail in flight, damage to HUDs may occur. Use PFDs as required. If HUDs are stowed, pull the associated ECBs to prevent damage from heat.
Cargo Under floor Heat System	1	0	May be inoperative provided consideration is given to OAT and the number of passengers/additional crewmembers on board.
Pressurization System			
a. Automatic Pressure Control System	1 1	1 0	One channel may be inoperative May be completely inoperative provided: (1) Manual Pressurization System is operative, and (2) Consideration is given to the additional crew workload caused by using Manual Pressurization, **OR** (3) Aircraft is operated unpressurized, and (4) Consideration is given to required cruise altitude, fuel/oxygen quantity, and OAT.
(1) CONST ALT Mode	1	0	May be inoperative provided consideration is given to the type mission to be flown (e.g., AE).
b. Emergency Depressurization Handle	1	0	May be inoperative provided: (1) Aircraft is operated unpressurized and (2) Consideration is given to required cruise altitude, fuel/oxygen quantity, and OAT.
c. Emergency Depressurization Switch	1	0	May be inoperative provided: (1) Control is available through the associated soft panel, **OR** (2) Aircraft is operated unpressurized, and (3) Consideration is given to required cruise altitude, fuel/oxygen quantity, and OAT.
d. Manual Pressurization Control System	1	0	May be inoperative provided: (1) Automatic Pressurization System is operative **OR** (2) Aircraft is operated unpressurized, (3) Consideration is given to required cruise altitude, fuel/oxygen quantity, and OAT.

e. Outflow Valve	1	0	May be inoperative provided: (1) Valve is manually positioned to full open (2) Pressurization Mode Select Switch is positioned to NO PRESS, (3) Aircraft is operated unpressurized, and (4) Consideration is given to required cruise altitude, fuel/oxygen quantity, and OAT.
f. Safety Valve	1	0	May be inoperative provided: (1) Outflow Valve is manually positioned to full open (2) Aircraft is operated unpressurized, and (3) Consideration is given to required cruise altitude, fuel/oxygen quantity, and OAT

Table 4.2. Auto Flight.

System Item	Installed	Required	Remarks or Exceptions
Autothrottle (A/T) System	2	0	
Digital Autopilot System	2	0	May be inoperative provided: (1) Associated autopilot is not essential for performance of mission requirements, and (2) If both autopilots are inoperative, give consideration to reduced crew duty day.
Digital Autopilot/Flight Director (DA/FD) Controls			**NOTE** An automatic altitude control system capable of maintaining altitude within 65 feet of that assigned is required for operation in RVSM airspace.
a. Autopilot Disengage Switch (Control Wheel)	2	0	Both may be inoperative provided another method of disengaging the autopilot is operative (e.g. G/A Switch). **NOTE** Failure of either Autopilot Disengage switch will disengage any autopilot function that is engaged at that time and will prevent either autopilot from reengaging until the switch function is repaired. Deselecting flight director modes on the REF/MODE panel does not disengage the autopilot. The one exception is deselecting APPR after glideslope capture. This will disengage the autopilot.
b. Autopilot Engage Lever	2	0	May be inoperative provided associated autopilot is considered inoperative.

c. Course Knob	2	0	May be inoperative provided: (1) Associated DA/FD Navigation (NAV) and Approach (APPR) Modes (except INAV) are considered inoperative (2) Associated Course Arrow and indication is considered inoperative (except in INAV Mode) (3) Departure/route/approach to destination (and alternate, if applicable) does not require use of VOR/ILS/MB or TACAN.
d. Go-around (G/A) Switch	2	1	
e. Heading Knob	2	0	May be inoperative provided: (1) Associated DA/FD Heading (HDG) Mode is considered inoperative (2) Associated Heading Marker is considered inoperative.
f. Lateral Axis (LAT) OFF Switch	1	0	May be inoperative provided the Autopilot Lateral Mode is considered inoperative.
g. Pitch Axis (PITCH) OFF Switch	1	0	May be inoperative provided the Autopilot Pitch Mode is considered inoperative. **NOTE** An automatic altitude control system is required for operation in RVSM airspace.
h. Pitch Control Wheel	1	0	May be inoperative provided: (1) Autopilot Pitch Attitude Hold Mode is operative, **OR** (2) Autopilot Pitch Mode is considered inoperative, and (3) Autopilot Pitch OFF Switch is positioned to OFF.
i. Pitch Synchronization (SYN) Switch	2	0	
j. Reference Mode (REF/MODE) Panel	2	1	One time flight authorized to repair facility, including enroute stops
(1) ALT SEL Switch	2	0	May be inoperative provided: (1) Associated Altitude Alert System is considered inoperative, and (2) Associated DA/FD Altitude Select (SEL) Mode is considered inoperative, and (3) GCAS is serviceable. **NOTE** An altitude alerting system is required for operation in RVSM.

(2) BARO SET Switch	2	1	**NOTE** Both Baro set switches must be operational for operation in RVSM
(3) Mode Select Switch	18	0	Individual Mode Select Switch(es) may be inoperative provided associated mode(s) is considered inoperative. **NOTE** For a given mode to be inoperative, both the pilot and co-pilot switches for that mode would have to be inoperative. **NOTE** An automatic altitude control system is required for operation in RVSM airspace.
(4) Reference Select Switch	2	1	
(5) Reference Set Knob	2	1	
k. Turn Ring	1	0	May be inoperative provided: (1) Autopilot Roll Attitude Hold Mode is operative, **OR** (2) Autopilot Lateral Mode is considered inoperative (3) Autopilot LAT OFF Switch is switched Off
Digital Autopilot/Flight Director (DA/FD) Indications			
a. AFCS Annunciator Panel	2	0	May be inoperative provided inoperative annunciation(s) is operative on the HUD or HDD PFD at affected location
b. Reference Set Panel Display	2	0	May be inoperative provided: (1) Individual Reference Annunciations and Markers (e.g., HUD, PFD cards, lines on tapes, carets) are operative, **OR** (2) Associated Reference Annunciations and Markers (e.g., HUD, PFD cards, lines on tapes, carets) are considered inoperative.
Flight Director System	2	0	May be inoperative provided Flight Director is not required for mission accomplishment or approach.

Table 4.3. Communications.

System Item	Installed	Required	Remarks or Exceptions
Control Wheel Hush Switch	2	1	
Control Wheel Microphone Switch	2	1	
Flight Station Speaker	2	1	
Get Home Radio Panel	1	0	One time flight is authorized to a repair facility.
Identification Friend or Foe (IFF) System	1	1	If self test fails, you may takeoff if the IFF was operational on the previous mission. Aircraft will not depart with an IFF known to be inoperative. EXCEPTION: Formations must have at least one operational IFF per element. **NOTE** An altitude reporting transponder is required for operation in RVSM airspace. **NOTE** Mode IV is not required for flights that originate in and will remain inside the inner boundaries of all domestic & coastal ADIZ‘s surrounding the CONUS.
a. Antenna	2	1	Mode 4 and Mode S require both antennas
Public (PA) Address System	1	0	May be inoperative if passengers or troops are carried and, at the discretion of the crew, effective and safe communications can be conducted.
UHF/VHF Radios	4	2	May be inoperative unless essential for performance of mission, route or Air Traffic Control requirements provided: (1) UHF No. 1 or VHF No. 1 is operative, and (2) At least one additional UHF or VHF Radio is operative.

Table 4.4. Electrical System.

System Item	Installed	Required	Remarks or Exceptions
AC Generator, Engine	4	3	May be inoperative if repair capability is not available. Flight to a destination with repair capability, including enroute stops, may be made. The generator will be removed and the generator mount padded before flight.
Batteries	2	2	
DC Voltmeter	1	1	
Electrical Control Panel	1	0	May be inoperative provided control is available through the associated soft panel.
Electronic Circuit Breaker Unit	13	13	
Indications (System Status Display)			
a. Loadmeter Indications	5	5	
b. Voltmeter Indication, AC	5	5	
c. Voltmeter Indication, DC	2	2	
Inverters			
a. Essential Avionics AC Bus	1	1	
b. Essential Avionics AC 26V Power	1	1	
c. Main Avionics AC Bus	1	1	
d. Main Avionics AC 26V Power	1	1	
Regulated Power Supply (RPS) System	8	0	May be inoperative provided the equipment normally powered through the inoperative Regulated Power Supply System is not required, **OR** Control is available through the associated soft panel.
Transformer Rectifiers (TR)	4	3	One TR may be inoperative for flight to a repair facility including enroute stops.

Table 4.5. Equipment.

System Item	Installed	Required	Remarks or Exceptions
Aerial Delivery System (ADS)			
a. Aerial Delivery Control Panel	1	0	May be inoperative provided: (1) Control is available through associated Soft Panel, **OR** (2) Airdrop operations will not be conducted.
Multifunction Control Display (MFCD)	1	0	May be inoperative provided Heavy Equipment airdrop or combat offload operations will not be conducted. **Exception**: May be inoperative for Heavy Equipment airdrop or combat offload during contingency operations if operational needs outweigh the risk of operating without the MFCD.
Pallet Lock Control Unit (PLCU)	10/7	0	May be inoperative provided Heavy Equipment airdrop or combat offload operations will not be conducted. The MFCD must be operational.

Table 4.6. Fire Protection.

System Item	Installed	Required	Remarks or Exceptions
APU Fire Control Handle Lights	1	1	
APU Fire Detection Loop	2	1	Flight to a station with repair capability, including enroute stops is authorized **OR** the APU is considered inoperative.
Bleed Air Overheat Detection Sensors	14	7	One sensor in each zone may be inoperative for flight to a station with repair capability, including enroute stops
Engine/APU Fire Extinguisher Bottle	2	2	
Engine Fire Control Handle Lights	4	4	
Engine Fire Detection Loop	8	4	One loop in each nacelle may be inoperative for flight to a station with repair capability, including enroute stops
Fire and Overheat Detector System (FODS) Controller	1	1	One time flight authorized to repair facility, including enroute stops is authorized
Smoke Detector	4	1	The under flight deck detector must be operational

Table 4.7. Flight Controls.

System Item	Installed	Required	Remarks or Exceptions
Aileron Trim Indicator	1	0	Flight to a destination with repair capability, including enroute stops, may be made. The trim tab position must be visually verified prior to flight.
Aileron Trim System	1	1	
Elevator Trim Indicator	1	0	Flight to a destination with repair capability, including enroute stops, may be made. The trim tab position must be visually verified prior to flight.
Elevator Trim System	1	1	
Elevator Trim Tab Control Wheel Switch	4	4	
Elevator Trim Tab Power Selector Switch	1	1	
Emergency Elevator Trim Tab Switch	1	1	
Flap Position Indicator (AMU)	1	1	
Flap Position Indicator Gauge	1	0	May be inoperative provided Flap Position Indicator (AMU) is operative.
Rudder System Direct Reading Pressure Gauge	2	0	
Rudder Trim Indicator	1	0	Flight to a destination with repair capability, including enroute stops, may be made. The trim tab position must be visually verified prior to flight.
Rudder Trim System	1	1	
Stick Pusher System	1	0	Flight to a destination with repair capability, including enroute stops, may be made provided the Stall Warning System is operational.
Stall Warning System	1	1	**NOTE** All stall warning system aural and visual warnings must be functional.
a. Angle of Attack Sensor	2	1	

Table 4.8. Fuel.

System Item	Installed	Required	Remarks or Exceptions
Boost Pump, Main Tank	4	3	One may be inoperative provided: (1) Applicable Flight Manual Limitations and Procedures are observed, (2) Main Tank Transfer Pumps are operative and, (3) ECBs for inoperative Main Tank Boost Pump are strapped opened.
Crossfeed Manifold Fuel Pressure Indication	1	1	
Crossfeed Valve	4	0	May be inoperative provided: (1) Associated Fuel Level Control Valve is operative, (2) Affected Valve is secured CLOSED, and (3) Main Tank Transfer Pumps are operative. (4) Cross-ship Separation Valve is operative. **NOTE** Valve must be manually closed if failed open or ECBs opened if valve is failed closed.
Cross-ship Separation Valve	1	0	May be inoperative provided valve is electrically disconnected and secured OPEN.
Fuel Control Panel	1	0	May be inoperative provided control is available through the associated Soft Panel. Consideration should be given to the addition to crew work load caused by using the soft panel.
Fuel Dump Valve	2	1	May be inoperative provided the valve is secured CLOSED
Fuel Management Controller	1	1	One channel may be inoperative.
Fuel Quantity Indications			**NOTE** Although the fuel quantity indications can be displayed on multiple HDD System Status Displays as well as on the hard panel, repetitions in excess of one indication per tank are not relevant. The _number installed_ includes one indication per tank and the _number required_ specifies the number of tanks that must have an operative indication.

a. Auxiliary Tank	2 2	1 0	One may be inoperative provided: (1) All Fuel Flow Indicators are operative, (2) Associated Fuel Transfer Pump is operative, (3) All other Fuel Quantity Indicators for tanks with fuel on the same side of the Cross-ship Valve are operative, and (4) Fuel quantity in the associated tank is verified by an accepted procedure before each takeoff (magnetic sight gauge). May be inoperative provided associated Fuel Tanks are verified EMPTY.
b. External Tank (if installed)	2 2	1 0	One may be inoperative provided: (1) All Fuel Flow Indicators are operative, (2) At least one associated Fuel Transfer Pump is operative, (3) All other Fuel Quantity Indicators for tanks with fuel on the same side of the Cross-ship Valve are operative, and (4) Fuel quantity in the associated tank is verified by an accepted procedure before each takeoff (dipstick). May be inoperative provided associated Fuel Tanks are verified EMPTY.
c. Main Tank	4	3	One may be inoperative provided: (1) All Fuel Flow Indicators are operative, (2) Associated Fuel Boost Pump is operative, (3) All other Fuel Quantity Indicators for tanks with fuel on the same side of the Cross-ship Valve are operative, and (4) Fuel quantity in the associated tank is verified by an accepted procedure before each takeoff (dipstick).
d. Totalizer	1	0	
Fuel Quantity Preset Switch	6/8	0	
Refuel Drain Pump	1	0	May be inoperative provided the manifold is manually drained.
Single Point Refuel Valve	1	0	May be inoperative provided alternate refueling procedures can be used.

Transfer Pump			
a. Transfer Pump, Auxiliary Tank	2	0	May be inoperative provided ECBs for inoperative pump are open. If pump is inoperative, associated tank is considered unusable.
b. Transfer Pump, External Tank (if installed)	4 4	2 0	One pump in each tank may be inoperative provided ECBs for inoperative External Tank Transfer Pump are opened. Both pumps in each tank may be inoperative provided: (1) ECBs for inoperative pumps are open, and (2) Both tanks are empty.
c. Transfer Pump, Main Tank	4	3	One may be inoperative provided ECBs for inoperative transfer pump are open and the respective Main Tank Boost Pump is operative.

Table 4.9. Hydraulic System.

System Item	Installed	Required	Remarks or Exceptions
Hydraulic Control Panel	1	0	May be inoperative provided control is available through the associated Soft Panel.
Hydraulic Pumps			
a. Auxiliary Hydraulic Pump	1	1	
b. Engine Hydraulic Pump	4	4	
c. Hand Pump, Auxiliary	1	0	May be inoperative provided the electrical auxiliary pump is operative.
d. Suction Boost Pump	2	2	
Hydraulic System Indications (System Status Display)			
a. Auxiliary System Pressure	1	0	May be inoperative provided the direct reading gauge is serviceable.
b. Booster System Pressure	1	0	May be inoperative provided Rudder Boost Pressure Indication is operative.
c. Utility System Pressure	1	0	May be inoperative provided Rudder Boost Pressure Indication is operative.

Table 4.10. Ice and Rain Protection.

System Item	Installed	Required	Remarks or Exceptions
Angle of Attack Sensor Anti-ice System	2	1	May be inoperative provided AOA sensor is considered inoperative.
Ice Detector	2	0	Both may be inoperative provided: (1) Wing Leading Edge Lights are operative, **OR** (2) Aircraft is not operated in known or forecast icing conditions.
Ice Protection Control Panel	1	0	May be inoperative provided control is available through the associated soft panel.
Engine Anti-ice Valve	4	0	Valve may be inoperative provided the failed valve has failed OPEN; if any valve is failed CLOSED do not operate in known or forecast icing conditions.
NESA Windshield Heat System	2	0	May be inoperative provided aircraft is not operated in known or forecast icing conditions. Flight manual restrictions apply.
Pitot Heat System	2	1	May be inoperative provided associated pitot static system is considered inoperative.
Propeller Ice Protection System	4	0	May be inoperative provided aircraft is not operated in known or forecast icing conditions.
Propeller De-icing Timer Unit	1	0	May be inoperative provided aircraft is not operated in known or forecast icing conditions.
Total Air Temperature Sensor Anti-ice System	2	0	May be inoperative provided aircraft is not operated in known or forecast icing conditions.
Windshield Defog	2	0	
Windshield Wiper	2	0	May be inoperative provided aircraft is not operated in precipitation on the ground.
Wing and Empennage Ice Protection System	1	0	May be inoperative provided aircraft is not operated in known or forecast icing conditions.

Table 4.11. Indicating/Recording Systems.

System Item	Installed	Required	Remarks or Exceptions
Advisory Caution and Warning System (ACAWS)	1	1	
Cockpit Voice Recorder (CVR)	1	1	**NOTE** All components must be operative for the CVR to be considered operative except as listed below.
a. Underwater Acoustic Locator Beacon (on CVR)	1	1	

System Item	Installed	Required	Remarks or Exceptions
Digital Flight Data Recorder (DFDR)	1	1	**NOTE** All components must be operative for the DFDR to be considered operative except as listed below
a. Underwater Acoustic Locator Beacon (on DFDR)	1	1	

Table 4.12. Landing Gear And Brakes.

System Item	Installed	Required	Remarks or Exceptions
Anti-Skid System	1	0	May be inoperative provided: (1) Anti-Skid System ECBs are opened, and (2) Flight Manual Performance limitations are applied, and (3) Shall be repaired at first capable repair facility. (4) Maximum Effort operations not allowed
Brake Pressure Indication			
a. Emergency Brake Pressure Indication	1	0	May be inoperative provided the Auxiliary System Pressure is operative.
b. Normal Brake Pressure Indication	1	0	May be inoperative provided Utility System Pressure Indication is operative.
Landing Gear Lever Lock	1	0	May be inoperative provided Landing Gear Control Panel is considered inoperative. **NOTE** On associated Soft Panel the Lock Function is satisfied by the Verify Switch.
Landing Gear Position Indicator	3	3	
Landing Gear Warning Light	2	0	May be inoperative provided GCAS is operational

Table 4.13. Lights.

System Item	Installed	Required	Remarks or Exceptions
Exterior Lighting			
a. Landing Light, Vis/IR	2	1	One landing light may be inoperative provided taxi light on that side is operative.
b. Navigation Light	6	3	For night operations, the left and right wingtip Nav lights must be operational in addition to one of the white lights on the tail cone.
c. Anti-collision (Strobe) Light	2	0	May continue to first stop where repairs can be made.
d. Taxi Light	2	0	Both may be inoperative provided landing lights are operative.

e. Wing Leading Edge Lights	2	0	May be inoperative at night provided: (1) Ice Detectors are operative, **OR** (2) Aircraft is not operated in known/forecast icing.
f. Wing Tip Taxi Lights	2	0	May be inoperative provided aircraft is not taxied in congested areas at night without adequate lighting for obstacle clearance.
Flight Station Lighting			May be inoperative provided sufficient lighting is operative to make each instrument, control and other device for which it is provided easily readable.
a. Copilot Displays Light Circuit	1	1	
b. Lamp Test Circuit	1	1	

Table 4.14. Navigation.

System Item	Installed	Required	Remarks or Exceptions
ADC	2	1	**NOTE** Both must be operative for operation in RVSM airspace
Automatic Direction Finding (ADF) System	2	0	Both may be inoperative provided departure/ route/approach to destination (and alternate, if applicable) does not require use of ADF. **NOTE** All components must be operative for the ADF to be considered operative.
Cursor System	1	0	May be inoperative unless required to accomplish mission objectives.
Digital Mapping System	1	0	May be inoperative unless required to accomplish mission objectives. Consideration should be given to the terrain, required altitudes, route peculiarities, visibility, the crew‘s experience with the route and whether the mission is conducted during daylight or at night.
Terrain Awareness and Warning System (TAWS)	1	0	May be inoperative unless required to accomplish mission objectives. Consideration should be given to the terrain, required altitudes, route peculiarities, visibility, the crew‘s experience with the route and whether the mission is conducted during daylight hours or at night.
Doppler Velocity Sensor	1	0	

Embedded Global Positioning/Inertial Navigation System (EGI)	2	1	May be inoperative provided: (1) Overwater (out of NAVAID range) or BRNAV flight will not be conducted, (2) Consult FLIP for airspace restrictions
Global Positioning System (GPS)	2	0	**NOTE** With GPS inoperative, the Inflight Alignment capability will not be available.
Ground Collision Avoidance System (GCAS)	1	0	May be inoperative provided passengers/troops will not be carried.
Radar, Low Power Color	1	0	Required if thunderstorms or hazardous conditions that can be detected by airborne radar are forecast or exist along route of flight.
a. Control Panel	1	0	May be inoperative provided: (1) Control is available through the associated Soft Panel, and (2) Modes other than the Map or Weather (WX) Modes are not essential to accomplish mission objectives.
Radar Altimeter (RA)	2	1	One may be inoperative provided CAT II ILS approaches will not be flown.
Standby Flight Instruments			
a. Inclinometer (Slip ball)	2	0	May be inoperative provided HUD Slip/Skid Indicator at affected position is operative.
b. Magnetic Compass	1	1	
c. Standby Airspeed/Altimeter	1	1	
d. Standby Attitude	1	1	
Station Keeping Equipment (SKE)	1	0	May be inoperative unless required to accomplish mission objectives. Consideration should be given to crew experience with alternate formation flying techniques, mission peculiarities and whether the mission is conducted during daylight hours or at night.
Tactical Air Navigation (TACAN)	2	0	All components must be operative for the TACAN to be considered operative. If both TACANs are inoperative, DME is not available.
Total Air Temperature Sensor	2	2	
Traffic Alert Collision Avoidance System (TCAS)	1	0	May be inoperative provided: (1) TCAS is deactivated and secured, and (2) TCAS is not necessary for compliance with ATC requirements. (3) Passengers/troops will not be carried.

UHF Direction Finder System	1	0	May be inoperative unless essential for performance of mission objectives.
VHF Navigation System (VOR/ILS/MB)	2	1	The No. 1 system must be operative. **NOTE** All components must be operative for the VHF Navigation System to be considered operative.

Table 4.15. Oxygen.

System Item	Installed	Required	Remarks or Exceptions
Crew Oxygen System	1	1	
Oxygen Regulators	10	3	May be inoperative provided one is available for each primary crewmember. Loadmaster‘s position must meet mission needs.

Table 4.16. Pneumatic.

System Item	Installed	Required	Remarks or Exceptions
Bleed Air Augmenter Valve	4	3 Less than 3	One may be inoperative provided: (1) Affected valve is CLOSED, (2) All Nacelle Shut Off Valves are operative. May conduct a one-time flight to repair facility. Fly unpressurized (Manual / Open) and with no icing forecast.
Bleed Air Divider Valve	1	0	May be inoperative provided: (1) Affected valve is OPEN, (2) Both Wing Isolation Valves are operative
Bleed Air Pressure Indication	1	1	
Bleed Air Environmental Control System Electronic Controller	1	1	One channel may be inoperative.
Nacelle Shutoff Valve	4	4	
Wing Isolation Valve	2	1	One may be inoperative provided: (1) Affected valve is OPEN, and (2) Divider Valve is operative.

Table 4.17. System Integration and Display.

System Item	Installed	Required	Remarks or Exceptions
Avionics Management Unit (AMU)	2	1	**NOTE** All displays and data fields must be operative for the associated AMU to be considered operative.
Bus Adapter Unit (BAU) Type I	6	4	BAU 3 (daytime only) and/or 6 will be used as replacements or can be failed (swap modules). 1,2,4,&5 must be operational.
Bus Adapter Unit (BAU) Type II	4	4	

System Item	Installed	Required	Remarks or Exceptions
Bus Interface Unit (BIU)	2	2	
Communication/ Navigation/ Breaker Panel (CNBP)	1	1	**NOTE** All displays and data fields must be operative for the CNBP to be considered operative. However, when an input is not present and the correct _data not available_ or _fail_ indication is displayed, the CNBP may still be considered operative provided the failed indication is not required for the current mission or flight.
Communication/ Navigation/ Identification Management Unit (CNI-MU)	3	2	One may be inoperative at the observer position. **NOTE** All components must be operative for the CNI-MU to be considered operative except as listed below.
Communication/ Navigation/ Identification System Processor (CNI-SP)	2	1	One may be inoperative for one time flight to repair facility.
Data Bus, (1553B)			
a. Avionics Bus	2	2	
b. Communication/ Navigation Bus	2	2	
c. Display Bus	2	2	
d. Electronic Warfare Bus	1	0	Unless required for mission accomplishment
e. Interprocessor Communication Bus	1	1	
f. Panel Bus	2	2	

Heads Down Display (HDD)	4	3	One may be inoperative provided the HUD on the affected side is fully operational. **NOTE** All data fields and displays must be operative for the associated HDD to be considered operative. However, when an input is not present and the correct _data not available_ or _fail_ indication (which may be a blank or removal of the indication) is displayed, the affected HDD may still be considered operative provided the failed indication is not required for the current mission.
Heads Up Display (HUD)	2 2	1 0	One may be inoperative provided both HDD‘s on the affected side are fully operational. Both may be inoperative provided: (1) All four Heads Down Displays (HDDs) are operative (including operative independent PFDs in the pilot and copilot positions), and (2) Forecast weather at destination is at or above Category I (CAT I) approach minimums.
a. HUD Control Panel	2	0	May be inoperative provided the associated HUD is considered inoperative.
b. HUD Declutter Switch, (Control Wheel)	2	0	
Mission Computer	2	2	

Table 4.18. Auxiliary Power Unit (APU).

System Item	Installed	Required	Remarks or Exceptions
AC Generator, APU	1	0	May be inoperative provided APU electrical power is not required. External electrical power or aircraft battery power must be available for starting engines.
Auxiliary Power Unit (APU)	1	0	May be inoperative provided APU bleed air or electrical power is not required. An alternate air source and external electrical power or aircraft battery power must be available for starting engines.
Bleed Air System, APU	1	0	May be inoperative provided APU bleed air is not required. An alternate air source must be available for starting engines.

Inlet Door, APU	1	0	May be inoperative provided: (1) Inlet Door can be operated manually and, (2) Inlet Door is secured CLOSED prior to departure, **OR** (3) Inlet Door is secured CLOSED and, (4) APU is considered inoperative.

Table 4.19. Doors.

System Item	Installed	Required	Remarks or Exceptions
Cargo Ramp and Door System	1	0	Warning light, latching mechanisms, and locking systems will be operative for pressurized flight. **NOTE** Aircraft will not take-off with a malfunctioning ramp lock system, with cargo on the ramp. Aircraft may continue to destination if ramp locks malfunction inflight. Repair lock malfunction or remove cargo from ramp prior to continuing flight operations. Do not pressurize the airplane if the ramp locks fail to lock. Unpressurized flight, with no cargo on the ramp, may be performed with a cargo ramp lock malfunction when mission requirements dictate.
a. Ramp Latches	10	9	One may be inoperative provided: (1) All remaining latches are operative, (2) Latch Warning System is operative, (3) No cargo is carried on the ramp, (4) Ramp is verified CLOSED and LATCHED before each departure, and (5) Cabin differential pressure is limited to 5 IN. HG.
Cargo Door and Ramp Indicators			
a. Ramp/Door FULL Light	1	0	May be inoperative provided: (1) MFCD "RAMP & DOOR FULL OPEN" ACAWS message can be used, **OR** (2) Ramp position airdrop light (aft cargo comp.) is operative
b. Ramp Position Airdrop Light	1	0	May be inoperative provided: (1) MFCD "RAMP & DOOR FULL OPEN" ACAWS message can be used, OR (2) Ramp/Door FULL Light (flight station) is operative.

System Item	Installed	Required	Remarks or Exceptions
c. Ramp Warning Light	1	0	May be inoperative provided: (1) ACAWS RAMP OPEN PRESSURIZED and RAMP OPEN 250 messages are operative, **OR** (2) Ramp is verified CLOSED and LATCHED before each departure, OR (3) Aircraft is operated unpressurized.
Cargo Door and Ramp Sensors			
a. ADS Arm Position Switches	2	0	May be inoperative provided the Aerial Delivery System is considered inoperative.
Crew Entrance Door	1	1	
a. Door Warning Light	1	0	May be inoperative provided the ACAWS CREW DOOR OPEN messages are operative.
Paratroop Door	2	0	May be inoperative provided affected Door is secured CLOSED and Latched, and the exit is not required to meet minimum emergency exits per number of passengers carried
a. Door Warning Light	2	0	May be inoperative provided the associated ACAWS L TROOP DOOR OPEN 250 or R TROOP DOOR OPEN 250 message is operative.

Table 4.20. Propellers.

System Item	Installed	Required	Remarks or Exceptions
Propeller	4	4	
Propeller Control Panel	1	0	May be inoperative provided control is available through the associated Soft Panel.
a. Propeller Control Switch	4	0	May be inoperative provided control is available through the associated Soft Panel.
b. Prop Sync Switch	1	0	
Propeller Synchrophasing	1	0	

Table 4.21. Powerplant.

System Item	Installed	Required	Remarks or Exceptions
Automatic Thrust Control System (ATCS)	1	1	If ATCS is degraded, a component/sensor has potentially failed. If maintenance is not available and takeoff is necessary, flight with ATCS DEGRADED (Caution) must be authorized by the OG/CC. Operation with ATCS Inoperative procedures will be followed..
Engine Assembly	4	4	

Engine Controls			
a. Engine Start Panel	1	0	May be inoperative provided control is available through the associated Soft Panel.
b. FADEC Panel	1	1	
c. Low Speed Ground Idle Switch	4	0	
d. Oil Cooler Flap Indications	4	0	May be inoperative provided control is available through the associated Soft Panel and oil temp indication(s) is/are operational for affected oil cooler flap(s).
Engine Indicating System			
a. Fuel Flow Indication	4	4	
b. Gas Generator Speed (NG) Indication	4	4	
c. Horse Power Indication	4	4	
d. Measured Gas Temperature (MGT) Indication	4	4	
e. Oil Pressure Indication, Engine	4	4	
f. Oil Pressure Indication, Gearbox	4	4	
g. Oil Quantity Indication	4	0	May be inoperative provided the oil quantity is verified before flight and the OIL QTY 1 (2, 3, or 4) LOI is operational.
h. Oil Temperature Indication	4	4	
i. Power Turbine Speed (NP) Indication	4	4	
Engine Oil System			
a. Oil Cooler Flap Automatic Control	4	0	May be inoperative provided Oil Cooler Flap Manual Control is operative
b. Oil Cooler Flap Manual Control	4	4	
Full Authority Digital Electronic Controls (FADEC)	8	7	One may be inoperative provided all dedicated sensor input and control logic is serviceable to/from the operative FADEC on the engine with lost redundancy and ATCS Inoperative Take-Off procedures are carried out. All eight engine FADECs must be serviceable for auto shutdown to be operative. ATCS will be degraded.
Nacelle Interface Unit (NIU)	4	4	

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

Chapter 5

OPERATIONAL PROCEDURES

5.1. Checklists. A checklist is not complete until all items have been accomplished. Momentary hesitations for coordination items, ATC interruptions, and deviations specified in the flight manual, etc. are authorized. Notes amplifying checklist procedures or limitations may be added to the checklists (in pencil). Currency of notes is a crewmember‘s responsibility. Checklist pages may be carried in separate binders provided checklist integrity is not compromised.

5.1.1. Checklist Inserts. MAJCOM Stan/Evals shall approve the use of checklist inserts IAW AFI 11-215. 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.

5.2. Duty Station. Both pilots shall be in their seat during critical phases of flight. One of the pilots may be out of their seat during a non-critical phase of flight 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). Notify the PIC prior to departing assigned primary duty station.

5.2.1. Augmented Crew Station. The PIC may allow individuals to occupy the augmented crew station as long as their presence will not hinder the performance of the crew. Qualified crewmembers, or unqualified crewmembers under the supervision of an instructor, may perform tasks assigned by the PIC.

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 in the flight station is limited to the number of seats with operable seat belts and a sufficient oxygen source. At no time should this exceed six (unless otherwise specified in a MAJCOM supplement to this AFI). Passengers and observers will not be permitted access to either pilot position.

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:

5.4.1.1. Airlift of nuclear weapons.

5.4.1.2. Aircraft emergencies, unless conditions prevent compliance.

5.4.2. PICs with less than 100 PAA hours since AC certification. If the pilot in the other seat is not an AC or above, a 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 40 (3/4 SM visibility).

5.4.2.2. RCR less than 12.

5.4.2.3. Crosswind component greater than 15 knots.

5.4.3. Maximum Effort Takeoff/Landing Policy. Only instructor pilots or a pilot under the direct supervision of an instructor pilot may conduct maximum effort or substandard airfield operations from the right seat.

5.5. Landing Gear and Flap Operating Policy. The pilot flying (PF) will command configuration changes. The pilot monitoring (PM) will verify appropriate airspeed and configuration prior to echoing the gear or flap actuation command. The right seat pilot will operate the landing gear and the PM will operate the flaps.

5.6. Outside Observer/ACM Duties. Available crewmembers will assist in clearing during taxi operations, and any time the aircraft is below 10,000 feet MSL as crew duties permit.

5.7. Seat Belts.

5.7.1. All occupants will have a designated seat with a seat belt. Crewmembers will have seat belts fastened when occupying a duty position, unless crew duties dictate otherwise.

5.7.2. Loadmasters, or authorized scanners, will only use the permanently installed paratroop door seats during combat or contingency missions with hostilities, or while participating in training missions that enable aircrews to improve their visual threat scanning techniques and procedures. Loadmasters will always have an assigned seat, even if using the paratroop door for scanning. When scanning duties are completed the loadmaster must use their assigned seat for subsequent take-offs and landings in non-threat environments. When used in combat/contingencies, the following conditions must be met:

5.7.2.1. The flight helmet will be worn.

5.7.2.2. Paratroop door armor will be in place.

5.7.2.3. Loadmasters/scanners will restrain themselves by either the primary or secondary method:

5.7.2.3.1. Use the restraint harness depicted in T.O. 13A1-1-1 as the primary means of loadmaster/scanner restraint. Route the harness straps through the support braces forward and aft of the paratroop doors with a girth hitch and attach to the restraint harness riser quick disconnect fittings. Ensure the leg and chest straps are connected. Attach the harness lifeline to a floor/Enhanced Cargo Handling System (ECHS) rail tiedown ring and adjust to limit vertical movement.

5.7.2.3.2. A secondary method is the use of 5000 pound straps routed around each of the supports located forward and aft of the paratroop door. Attach the hook end of the strap to the riser clip of the restraint harness and attach the ratchet end to a tiedown ring on top of the ECHS rails. Wrap the hook of the ratchet with cloth backed tape to ensure it does not separate from the tiedown ring. Attach the lifeline to a floor/ECHS tiedown ring and adjust to limit vertical movement.

5.7.3. All crewmembers will have seat belts fastened during takeoff and landing. Fasten shoulder harness unless crew duties dictate otherwise. Crewmembers performing instructor or flight examiner duties or are in upgrade training to instructor or flight examiner 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, may remain secured on litters for takeoff and landing.

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

5.8.1. NVG Lighting. Follow the exterior lighting guide in AFTTP 3-3.C-130J for all NVG training situations. Lights-out operations during peacetime will be conducted IAW AFI 11-202V3.

5.8.1.1. Total lights out operations are authorized with concurrence of the controlling agency in restricted airspace and warning areas.

5.8.2. Cargo compartment lighting will be dictated by the tactical situation and will be coordinated between the mission commander/PIC and loadmaster(s). Cargo compartment emergencies may require overt lighting on full bright. The nature of the emergency and the tactical situation will dictate what level of lights are used, and whether the loadmaster continues the use of NVGs.

5.8.3. Strobe Lights. For tactical operations refer to AFTTP 3-3.C-130J. For non-tactical operations, the aircraft strobe lights will be operated as follows:

5.8.3.1. ―Before Starting Engines‖ Checklist. Set the top strobe to RED. ***NOTE:*** When operating the APU, set the top strobe to RED.

5.8.3.2. ―Lineup‖ Checklist. Set both strobes to WHT for day and night single-ship and day formation. Set both strobes to RED for night formation.

5.8.3.3. ―After Landing‖ Checklist. Set the top strobe to RED. The top strobe shall remain in RED until APU shutdown.

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, or radio systems.

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

5.9.3. The following handheld (HH) GPS units meet the requirements of AFI 11-202 Volume 3 and may be used with approved laptop computers in flight: Bendix King KLX100 and Garmin GPS 35-USB.

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.

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

5.11. Advisory Calls. The PF will announce changes to the level of automation, flight director and autopilot mode selections, and mode transitions, (e.g. ―Autopilot engaged‖, ―Altitude Hold‖, ―Autothrottles‖, ―Nav-Capture‖, etc.) and/or when circumstances require deviating from normal procedures. The PM will make all advisory calls except those designated for other crewmembers. Mandatory calls are as follows:

5.11.1. Takeoff. State ―V-ONE‖ at V1 (Refusal Speed). State ―ROTATE‖ at VR (Rotation Speed). If V1 is adjusted to = VR, state, ―ROTATE‖ at VR.

5.11.2. Takeoff Aborts and Landings. The PM will advise the PF which power levers to bring to reverse (―All 4‖, ―Inboards‖, ―Outboards‖).

5.11.3. Deviations. Any crewmember seeing a deviation of heading (+/- 10 degrees), airspeed (+/-10 kts), or altitude (+/- 100 feet), and no attempt is being made to correct the deviation will immediately notify the PF.

5.11.4. Any crewmember seeing a potential terrain or obstruction problem will immediately notify the PF.

5.11.5. 5. Advisory calls: Refer to **Table 5.1** through **Table 5.4** for a listing of mandatory advisory calls, responses, and aircrew actions.

Table 5.1. Climb Out.

PHASE OF FLIGHT	PM CALL	PF RESPONSE
Transition Altitude	―2992 Set‖	―2992 Set‖
1000 below assigned altitude	Acknowledge altitude leaving for altitude assigned	Acknowledge

Table 5.2. Descent.

PHASE OF FLIGHT	PM CALL	PF RESPONSE
Transition Level	(Local altimeter) ―Set‖	(Local altimeter) ―Set‖
1000 above assigned altitude	Acknowledge altitude leaving for altitude assigned	Acknowledge

Table 5.3. Non-precision Approaches.

PHASE OF FLIGHT	PM CALL	PF RESPONSE
100 feet above Final Approach Fix (FAF) altitude	―100 above‖	
100 feet above step down altitude	―100 above‖	
500 feet AGL	―500 feet‖ **or** ―Unstable, Go Around‖ (5)	
100 feet above Minimum Descent Altitude (MDA)	―100 above‖	
At MDA	―Minimums‖	
Runway environment in sight and will remain in sight.	―Runway in sight‖	(1)

Missed Approach Point (MAP)	—Missed Approach Point‖ (4)	—Landing‖ or ‖Going Around‖

Table 5.4. Precision Approaches.

PHASE OF FLIGHT	PM CALL	PF RESPONSE
100 feet above glide slope intercept altitude	—100 above‖	
500 feet AGL (6)	—500 feet‖ **or** —Unstable, Go Around‖ (5)	
100 feet above Decision Height (DH) / Decision Altitude (DA)	—100 above‖	
At DH / DA	—Minimums‖	(3)
- Runway environment in sight and will remain in sight		—Landing‖
- Only Approach Lights in sight (CAT I ILS)		—Continuing‖ (2)
- Approach lights and/or Runway environment not in sight		—Going Around‖
- At 100 HAT (CAT I ILS)	—100 Feet‖	—Landing‖ or ‖Going Around‖

NOTES:

(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 I minimums on a CAT I ILS, the pilot may not see the runway environment at DH; however, the initial portion of the approach lights may be visible. The pilot may continue to 100 HAT with reference to the approach lights only. 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 (CAT I), or go-around. Respond with the intention to land if runway environment is in sight, will remain in sight throughout touchdown and the aircraft is in a position for a safe landing.

(4) If the pilot flying has stated —landing‖ then this call is not required.

(5) Refer to stabilized approach criteria in paragraph **5.12**.

(6) For Category II (CAT II) approaches crosscheck offside Radar Altimeter if not accomplished previously on approach (i.e. 1000 AGL).

5.12. Stabilized Approach Philosophy. Unstable approaches are primary contributors to numerous military and civilian mishaps. Stabilized approaches are essential for the safe operation of aircraft and are mandatory. This criteria defines specific parameters that mitigate

the risk during this critical phase of flight. This philosophy requires aircrew to take immediate corrective actions to stabilize the approach when outside designated parameters.

5.12.1. The following criteria applies to all non-tactical approaches:

5.12.1.1. At 1000 feet AGL (IMC):

5.12.1.1.1.□□□□□□ Airspeed is -10/+20 knots of computed approach speed for aircraft configuration.

5.12.1.1.2.□□□□□□ Aircraft is in a landing

configuration. 5.12.1.1.3. Sink rate is no greater

than 1500 FPM. 5.12.1.1.4. All briefings and

checklists are complete.

5.12.1.1.5. If these criteria are not met by 1000 feet AGL (IMC), the PM will announce the deviation.

5.12.1.2. At 500 feet AGL (IMC/VMC):

5.12.1.2.1.□□□□□□ Airspeed is -10/+10 knots of computed approach speed for aircraft configuration.

5.12.1.2.2.□□□□□□ Aircraft is in a landing

configuration. 5.12.1.2.3. Sink rate is no greater

1000 FPM.

5.12.1.2.4.□□□□□□ All briefings and checklists are complete.

5.12.1.2.5.□□□□□□ If these criteria are not met by 500 feet AGL for all non-tactical approaches, the PM will announce "Unstable, go around." The PF will execute a missed approach.

5.12.2. Tactical Approaches/VFR Patterns. Stabilized approach criteria for tactical approaches/VFR patterns is recommended and desired. However, it is recognized that this criteria is not always valid due to the type of approach being conducted. In this situation, the PF is required to brief the maneuver parameters prior to execution.

5.13. 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.

5.13.1. Aircraft Interphone. Primary crewmembers will monitor VOX and interphone during all 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.

5.13.2. Radios:

5.13.2.1. The PM normally makes all ATC radio calls.

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

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

5.13.2.4. One pilot should record and read back all ATC clearances.

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

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

5.14. Crew Resource Management (CRM).

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

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

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

5.14.1.3. 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.

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

5.14.2.1. Safety permitting, stabilize the aircraft and ensure terrain clearance.

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

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

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

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

5.14.4. Fuel Panel. The fuel panel is considered a ―verification panel.‖ The PM/LM should advise the PF before operating the panel (i.e., priming, cross-feeding, tank-to-engine, transferring, non-standard configurations, and dumping). After completing the task, the PF/PM should verify the panel is set correctly. To facilitate this coordination, pilots should plan to make changes to the fuel panel during periods of low workload such as before taxi and during cruise segments.

5.14.5. Critical Action Coordination.

5.14.5.1. Flight critical/irreversible actions should always be confirmed by two crew members. These actions include, but are not limited to, pulling the engine fire handle, placing the engine start switch to stop, moving a propeller control switch to feather, discharging agent, and dumping fuel. The crew member performing the action points to the affected switch/handle and verbally seeks confirmation from a second crew member (i.e. ―CONFIRM NUMBER ONE‖). The crew member confirming the action looks at the affected switch/handle and acknowledges (i.e. ―NUMBER ONE CONFIRMED‖).

5.14.5.2. Once the fire handle is pulled, the ACAWS messages indicating the shutdown condition/situation may disappear. Verifying and verbally confirming associated ACAWS messages prior to engine shutdown will assist the aircrew determine if the engine can be restarted if a greater emergency arises.

5.15. Automation. The purpose of the automation is to assist the flight crew with mission accomplishment. Aircraft automation will not command crew actions. The automated systems will recommend/perform actions and the crew will determine/verify the proper course of action.

5.15.1. Crewmembers will understand the operation and limitations of automation and be proficient at operating the aircraft in all levels of automation. The level of automation used at any specific time should be the most appropriate to reduce crew workload, increase situational awareness, and enhance mission effectiveness and safety. The PF will determine the most desirable level of automation for a given situation. The AC has the ultimate responsibility and authority for the safety of the aircraft, passengers, and crew and will manage workload, set priorities and employ the available resources accordingly. As flight situations change, do not feel locked into a level of automation.

5.15.2. If the AFCS/Flight Director provides unexpected commands to the flight controls, the PF will revert to lower levels of automation or manual flight as necessary before attempting to resolve system problems.

5.15.3. Crews will follow the guidance below, except for cruise flight (above 10,000 ft):

5.15.3.1. The PF will fly the aircraft and maintain a dedicated head-up lookout. If the PF intends to be head-down, aircraft control shall be transferred to the PM, who will remain head-up. Head-down time does not include momentary scanning of the CNI-MU, HDDs, and panels.

5.15.3.2. Any crewmember that observes both pilots head-down at the same time shall alert the PF without delay.

5.15.3.3. If the PM must divert attention away from normal clearing and monitoring duties for an extended period of time, the PM will state ―head-down.‖ The PF will verbally acknowledge this call. The PM will verbalize ―head-up‖ after completion of duties. The PF will then update the PM on current status as required.

5.15.4. The importance of entering the proper data into the system is elevated with automated flight. Historical data has indicated a significant decrease in the level of safe operations due to pilots becoming complacent and overly reliant on automated systems.

5.15.4.1. A closed loop system of entering data and verifying the correct data is entered before allowing the aircraft automation to perform a function is critically important. Regardless of who initiates the action, the other pilot must verify the data and both pilots will monitor the aircraft for the appropriate response.

5.15.4.2. **Table 5. 5 and Table 5.6** provide standard actions for both pilots during Automated and Manual flight.

5.15.4.3. Automated Flight is defined as the autopilot fully engaged and coupled to the Flight director. Use autothrottles as desired. (CAUTION: If the autothrottles are disengaged for sustained descents during automatic flight, it is possible that Altitude

Capture may occur with the power levers at or near Flight Idle and result in an approach to stall condition.).

5.15.4.4. Manual Flight is defined as the PF providing manual input to the flight controls or autopilot. Use autothrottles as desired.

Table 5.5. Automated Flight.

	PF	PM
REF/MODE PANEL		
Reference Settings (1) (HP, RAD ALT, IAS, FPA, MINS)	-Set as required	-Verify settings
Mode Selections (ALT, NAV, HDG, APPR, IAS, VS, CAPS)	-Select desired mode -Announce mode status	-Verify and acknowledge
LATERAL FLIGHT		
Direct To/Intercept Course To/ Route Modification	-Verify route modification -Direct the PM to execute	-Modify route as directed -Execute when directed
Radar Vector/Heading Change	-Set the heading reference -State setting	-Verify and acknowledge
VERTICAL FLIGHT		
Climb/Descent clearance	-Verify and acknowledge	-Set new FL/altitude reference
NOTE: 1. For arrival/approach planning, the PF may transfer aircraft control to the PM and set all reference settings as required for the planned approach.		

Table 5.6. Manual Flight.

	PF	PM
REF/MODE PANEL		
Reference Settings (1) (HP, RAD ALT, IAS, FPA, MINS)	-Direct PM to set if required -Verify settings	-Set as directed by PF
Mode Selections (2) (ALT, NAV, HDG, APPR, IAS, VS, CAPS)	-Select desired mode -Announce mode status	-Verify and acknowledge
LATERAL FLIGHT		
Direct To/Intercept Course To/ Route Modification	-Verify route modification -Direct the PM to execute	-Modify route as directed -Execute when directed
Radar Vector/Heading Change	-Verify and acknowledge	-Set heading reference -State setting
VERTICAL FLIGHT		
Climb/Descent clearance	-Verify and acknowledge setting	-Set new FL/altitude reference

NOTES:
1. For arrival/approach planning, the PF may transfer aircraft control to the PM and set all reference settings as required for the planned approach.

2. The PF may direct the PM to select desired modes. In this case, the PM will make the necessary announcements and the PF will verify and acknowledge.

5.16. Ground Collision Avoidance System (GCAS) / Terrain Awareness and Warning System (TAWS).

5.16.1. When a GCAS TERRAIN or TAWS TERRAIN / OBSTACLE AHEAD alert occurs and terrain/obstacle clearance cannot be assured visually, immediately change the flight path (within 3 to 5 seconds) by initiating a takeoff power climb. Continue the climb until a safe altitude is reached or until exiting the alert envelope. With terrain and obstacles clearly in sight, the PF will call terrain/obstacle in sight, state intentions and visually remain clear of terrain/obstacles. If the situation degrades and a GCAS PULL UP or TAWS TERRAIN / OBSTACLE PULL UP alert occurs, immediately execute the Wind Shear/GCAS/TAWS alert recovery in the flight manual. ***WARNING*:** Do not delay pull-up for diagnosis of the low altitude warning.

5.16.2. In TACTICAL mode, several GCAS alert envelopes are modified to allow for maneuvering in close proximity to terrain. Normally, this mode is most suitable for modified contour flight and VFR low-altitude arrivals but, at the AC‘s discretion, may be used for any tactical operation.

5.17. Traffic Alerting 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.

5.17.1. Mission requirements may allow selection of ―TA only‖ when operating from parallel runways, in the visual traffic pattern, or in formation since the proximity to aircraft may result in unwarranted RAs. Excessive climb and descent rates could lead to inadvertent ―TA/RA‖. Reducing climb/descent rates near level off can limit inadvertent TCAS advisories.

5.18. Radar Altimeter.

5.18.1. Instrument Approaches.

5.18.1.1. Precision Approaches.

5.18.1.1.1. Set RADALT reference to HAT minus 50 feet. 5.18.1.1.2. CAT II ILS. Set published RA minimums.

5.18.1.2. Non-Precision Approaches. Setting the RADALT as prescribed below is meant to adequately alert the crew to an unsafe terrain clearance condition (―Altitude-Altitude‖) in the absence of a ―Minimums-Minimums‖ alert. Setting the RAD ALT to a higher

setting than prescribed may result in premature/unexpected ―Altitude-Altitude‖ advisories and prevent the GCAS ―Minimums‖ alert.

5.18.1.2.1. Straight-In Approaches. Normally set RAD ALT reference to 250 feet (minimum setting).

5.18.1.2.2. Circling Approaches. Normally set RAD ALT reference to 300 feet (minimum setting).

5.18.1.3. When established on a published approach in IMC, or at night when terrain clearance cannot be assured, and an ―Altitude-Altitude‖ special alert is heard, initiate an immediate go-around. Once terrain clearance is confirmed, resume normal operations. In day VMC, the aircrew will evaluate the alert and determine the appropriate course of action (continue the approach or go-around).

5.18.2. Tactical Operations. For modified contour flight, the RADALT should be set no lower than 80% of the planned contour (i.e. for 500 AGL contours, set the RADALT no lower than 400 feet). Other settings may be briefed and used based on terrain and mission needs.

5.19. 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.

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

5.21. Runway, Taxiway and Airfield Requirements:

5.21.1. Minimum Runway and Taxiway Requirements. For peace-time do not use runways less than 3,000 feet. Minimum runway width is 80 feet (60 feet for max effort). Minimum taxiway width is 30 feet. The MAJCOM/A3/DO may waive runway/taxiway width requirements.

5.21.2. Normal Operations.

5.21.2.1. The minimum runway required for a normal takeoff is the charted CFL.

5.21.2.2. Normal takeoffs shall not be made when Refusal Speed is less than Ground Minimum Control Speed (Vmcg). In this condition the PIC will either:

5.21.2.2.1. Download cargo or fuel.

5.21.2.2.2. Wait until weather conditions improve.

5.21.2.2.3. Utilize maximum effort procedures, see paragraph **5.21.6**.

5.21.2.3. Runway Length for Takeoff and Intersection Takeoffs. Normally, takeoffs will be initiated from the beginning of the approved usable portion of the runway. Intersection takeoffs may be made at the discretion of the AC provided the operating environment (i.e., gross weight, obstructions, climb criteria, weather, etc.) allows for a safe takeoff and departure. CNI TOLD computations must be based on the runway remaining.

5.21.2.4. The minimum runway required for normal landings is the charted landing distance over 50 foot obstacle with outboard engines in high speed ground idle and inboard engines in max reverse.

5.21.2.5. Use of Overruns. If approach end overruns are available, 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.

5.21.2.6. Acceleration Check Time. An acceleration check time is required when refusal speed is less than rotation speed. An Acceleration Time Check should also be computed when, in the opinion of the AC, a critical condition exists (heavy GW, high PA, obstacles, RSC, etc.).

5.21.3. Arresting Cables.

5.21.3.1. 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.

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

5.21.3.3. Operations are authorized on runways where BAK-12 systems are installed, with an eight point cable tie-down system, without regard to the Dash-One Caution. When operating from runways equipped with other types of systems, or if it is unknown if the BAK-12 system includes eight point tiedowns, aircrews should recognize the increased risk of damage to the aircraft.

5.21.4. Other Airfield Requirements.

5.21.4.1. 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.

5.21.4.2. Aircrews and planning agencies will contact HQ AMC/A3AS for all questions pertaining to airfield weight bearing capability and will review the GDSS/GDSS2/ASRR before all off-station operations. MAJCOM/A3 is the waiver authority for the restrictions in GDSS/GDSS2 Giant Report and ASRR, unless specifically delegated in AFI 11-2MDS Vol 3 or AMCI 11-208. Direct GDSS/GDSS2 Giant Report and ASRR waiver requests to HQ AMC/A3AS for operational missions. HQ AMC A3V is the OPR for waivers to airfield restrictions. Route requests through MAJCOM Stan/Eval. 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.

5.21.4.3. A current landing zone (LZ) survey (within the past five years as specified in AFI 13-217) is needed before using other than hard-surfaced runways or taxiways.

5.21.5. RCR and RSC Limitations.

5.21.5.1. When other than RCR or RSC is used to report the runway conditions, the PIC will refer to the Flight Information Handbook (FIH) for standard ICAO conversions based on general runway condition; be conservative when dealing with unknown conditions (e.g., forward operating bases (FOBs), unpaved runways). Normally, RCR values are not reported for taxiways and ramps. During periods of reported low RCR, the taxiways and ramps may have an even lower RCR than reported for the runway. The runway surface should be considered wet when water on the runway causes a reflective glare.

5.21.5.2. The performance charts used to determine braking action are based on concrete runways. Use the RCR values given in **Table 5.7** when landing on other than concrete surfaces. The RCR values **Table 5.7** are estimates based on operational experience and should be used only as a guide.

Table 5.7. RCR Values.

SURFACE TYPE	RCR (DRY)	RCR (WET)
Asphalt	23	12
Aluminum Matting	20	10
M8A1/With Anti-Skid (Pierced Steel Planking, (PSP))	20	8
M8A1/Without Anti-Skid PSP	13	3
Clay	16	5
Crushed Rock	16	5

5.21.5.3. Limit operations on snow, slush and water covered runways to an RSC of 10. This equates to a covering of one inch of slush/water and up to three inches of loose, blowing snow. Performance data does not exist for coverings in excess of these amounts.

5.21.5.4. On runways partially covered with snow or ice, takeoff computations will be based on the reported RSC or RCR for the cleared portion of the runway. A minimum of 40 feet either side of centerline should be cleared (30 feet for maximum effort operations). If 40 feet either side of centerline is not cleared (30 feet for max effort ops), computations will be based on the non-cleared portion.

5.21.6. Maximum Effort Operations.

5.21.6.1. Use Maximum Effort procedures when conditions (runway dimensions and/or obstacles) or directives require their use. Runway widths less than 80 feet require a maximum effort qualified crew. All maximum effort operations must fall in the ―Recommended‖ area of the wind limitations charts unless otherwise approved by the OG/CC. For peace-time, do not use runways less than 3,000 feet long unless waived by the MAJCOM/A3/DO or designated representative.

5.21.6.2. Maximum Effort Takeoff. Use maximum effort takeoff procedures if available runway length is less than CFL.

5.21.6.2.1. Minimum runway length is the charted ADJUSTED MFLMETO. ***EXCEPTION:*** MAJCOM A3/DO may approve the use of MFLMETO not corrected for V_{MCA} or V_{MU3} if mission necessity dictates.

5.21.6.2.2.□□□□□□ Minimum rotation speed is Adjusted Maximum Effort Rotation Speed (V_{Ramax}). ***EXCEPTION:*** MAJCOM A3/DO may approve the use of V_{Rmax} if mission necessity dictates.

5.21.6.2.3.□□□□□□ Acceleration Check Time. An acceleration check time is required when refusal speed is less than rotation speed.

5.21.6.3. Maximum Effort Landing: Use maximum effort landing procedures whenever the runway available for landing is less than that required for a normal landing. Plan the touchdown within the first 500 feet of usable runway.

5.21.6.3.1.□□□□□□ The minimum runway required for a maximum effort landing is equal to the charted Maximum Effort landing ground roll plus 500 feet.

5.21.6.3.2.□□□□□□ Compute landing performance using: two outboard engines in ground idle, two inboard engines in reverse, (―2OB HGI; 2IB REV‖ in the Performance Manual), and maximum anti-skid braking.

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

5.22.1. Do not taxi an aircraft within 25 feet of obstructions without wing walkers monitoring the clearance between aircraft and obstruction. With wing walkers, avoid taxi obstructions by at least 10 feet. ***EXCEPTION:*** IAW AFI 11-218, *Aircraft Operations and Movement on the Ground*, aircraft may taxi into or out of a marked parking spot without marshallers/wing walkers at home station along fixed taxi lines which have been measured to ensure a minimum of 10 feet clearance from any permanent obstruction. Adjacent aircraft are considered a permanent obstruction provided the aircraft is parked properly in its designated spot and not moving. Aerospace Ground Equipment (AGE) and vehicles are considered a permanent obstruction provided it is parked entirely within a designated area. Areas will be designated by permanent markings such as painted boxes or lines on the ramp or another suitable means.

5.22.2. When taxi clearance is doubtful, use one or more wing walkers. If wing walkers are unavailable, the PIC will 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 positioned at the paratroop door(s) or ramp to act as an observer while maneuvering on narrow taxiways. During night taxi operations, marshallers and wing walkers will have an illuminated wand in each hand. Observers should be in a position to see wing walkers at all times (through door or windows) and communicate with the pilot.

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

5.22.3.1. Carefully review airfield layout during mission planning. Be familiar with taxi routes, turn requirements, and areas for potential FOD.

5.22.3.2. Minimize power settings during all taxi operations.

5.22.4. Reverse Taxi: The PIC shall coordinate reverse taxi directions and signals with the loadmaster and marshaller (when available). Before reverse taxiing, the loadmaster shall:

5.22.4.1. Secure all cargo and ensure all passengers are seated.

5.22.4.2. Open the aft cargo door and lower the ramp to approximately 12-inches above horizontal.

5.22.4.3. Position himself/herself on the aircraft ramp to direct reverse taxi, report any hazards, and to provide the PIC with timely interphone instructions on turns, distance remaining, conditions of the maneuvering area, and stopping point.

5.22.4.4. Stop no less than 25 feet from an obstruction even if using a wing walker.

5.22.4.5. During night reverse taxi operations without NVGs, the PIC and loadmaster will ensure the taxi area is sufficiently lighted.

5.22.5. After landing and clearing the runway, and with approval of the PIC, the loadmaster may open the aft cargo door and lower the ramp to horizontal to prepare for cargo off/onload provided equipment, cargo, and passengers remain secure in the cargo compartment. Careful attention must be given to the ramp position when taxiing on rough, or unprepared surfaces.

5.23. Fuel Jettison Procedures.

5.23.1. Aircraft commanders should elect to burn down fuel versus jettison, unless safety of flight dictates an immediate jettison (as determined by the PIC). Except in the case of an emergency, before jettisoning fuel, notify the appropriate ATC or flight service facility of intentions, altitude, and location. If available, the PIC will use designated jettison areas, except when safety of flight would be compromised.

5.23.2. For missions tasked by higher headquarters authority, the tasking C2 agency (618 TACC, AOC/AMD, CAOC, etc.) may authorize fuel jettison when an urgent operational requirement dictates immediate recovery/reconstitution of the aircraft and/or aircrew. The tasking C2 agency may provide fuel jettison instructions in the OPORD, mission directive, SPINS, etc.

5.23.3. For training missions, the OG/CC may approve fuel jettison when an urgent operational requirement exists to expedite recovery of the aircraft and all alternatives have been exhausted.

5.23.4. 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. Avoid circling descents. Initiate **AF Form 813**, Request for Environmental Impact Analysis, and submit it to the base environmental coordinator.

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

5.23.5.1. Scheduled Duration.

5.23.5.2. Actual Duration.

5.23.5.3. Landing Gross Weight.

5.23.5.4. Computed Stopping Distance.

5.23.5.5. Recovery Field.

5.23.5.6. Runway Available.

5.23.5.7. Jettison Altitude/Location.

5.23.5.8. Outside air temperature.

5.23.5.9. Wind direction and velocity.

5.23.5.10. Jettison Amount.

5.23.5.11. Reason for Jettison.

5.23.5.12. Approval Authority.

5.24. Aircraft Speed. IAW AFI 11-202V3.

5.25. 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:

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

5.25.1.1. Bird Watch Condition Low - No operating restrictions.

5.25.1.2. 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.

5.25.1.3. 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.

5.25.2. Commanders establish Phase II of the BASH program during increased periods of migratory bird activity. Schedulers shall make every effort to not schedule takeoffs, landings, and low-levels 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.

5.25.3. 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.

5.25.4. 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 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.

5.25.5. 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.

5.26. Functional Check Flights (FCFs) and Acceptance Check Flights (ACFs). FCFs and ACFs will be accomplished IAW T.O. 1-1-300, *Functional Check Flights and Maintenance Operational Checks*, TO 1C-130J-6CF-1, *Acceptance or Functional Check Flight Procedures*, and AFI 21-101, *Aerospace Equipment Maintenance Management*. 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.

5.26.1. FCF Restrictions. See T.O. 1-1-300 and AFI 21-101.

5.26.1.1. The OG/CC is responsible for the wing FCF program. Publish additional guidance in local supplement to this instruction. The OG/CC may authorize a partial FCF to check only those systems disturbed by maintenance, an inspection or modification.

5.26.1.2. 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.

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

5.26.1.4. The OG/CC will only certify highly experienced instructors as FCF crewmembers. The OG/CC, or deployed equivalent, may authorize temporary waivers to FCF aircrew qualification when operationally necessary. The OG/CC will determine FCF crew complement after a thorough ORM assessment for that specific FCF flight.

5.26.1.5. 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 IMC to ―VFR on Top‖ for the altitude phase of the flight.

5.26.1.6. 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.

5.26.1.7. 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.

5.27. Participation in Aerial Events. See AFI 11-209, *Air Force Participation in Aerial Events*, and the appropriate MAJCOM supplement. Aerial events must be sanctioned and individually approved by the appropriate military authority, and with the Federal Aviation

Administration (FAA). AFI 11-209 and MAJCOM supplements identify events sanctioned for support, and specifies the approval authority for each type.

5.28. Not Used.

5.29. Not Used.

5.30. 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 (ALS) Program*, Attachment 1 for minimum aircrew clothing requirements. All crewmembers will have Nomex gloves in their possession.

6.1.2.2. It is recommended that primary crewmembers wear Nomex gloves during engine start, takeoff, and landing.

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

6.1.3. Personnel will have the 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. 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.

6.2.2. Shot Record. Crewmembers must maintain worldwide shot requirements.

6.2.3. 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.

6.2.4. Identification Tags. Crewmembers will wear two identification tags around the neck or carry them in a flight suit pocket on all flights.

6.2.5. 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.

6.2.6. Helmets and Oxygen Masks (N/A for AE crewmembers). Crewmembers will carry a personal helmet:

6.2.6.1. Anytime parachutes are required to be carried by the mission directive.

6.2.6.2. Whenever the aircrew requires night vision goggles or flash-blindness devices (MIL-G and/or PLTZ goggles).

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

6.2.6.4. For unpressurized flight operations above 10,000 feet MSL.

6.2.7. Flashlights. Each crewmember must carry an operable flashlight for all 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. Tool and Airdrop Kits. At least one loadmaster‘s tool kit will be on board for all missions. One loadmaster airdrop kit will also be aboard the aircraft for aerial delivery missions. Units will identify tool kit contents and inventory procedures in local supplements.

6.2.10. Night-Vision Operations. For night-vision operations, the aircraft commander should preflight and carry a spare set of NVGs onboard the aircraft. If a spare set is not carried, NVG operations should cease if either pilot‘s NVGs fail or visual acuity deteriorates. Each crewmember will preflight their own NVGs before flight and carry a spare set of batteries. Each crewmember will also carry an NVG-compatible light source.

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, at a minimum, should include the items in AFI 11-202 Vol 3, AFTTP 3-3.C-130J and the following:

6.3.2. Review tasking, itinerary, and altitude reservation (ALTRV) requirements.

6.3.3. Review applicable OPORD, SPINS, Airfield Risk Assessment (ARA), Country Risk Assessment (CRA), and FLIP.

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

6.3.5. Obtain required customs forms.

6.3.6. Obtain appropriate FLIP and sufficient communications security (COMSEC) materials for the duration of the mission.

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

6.3.8. Ensure visas have been received, if required.

6.3.9. Obtain terrain charts for unfamiliar destinations if available.

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

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

6.3.12. Ensure the correct aircraft navigation database is loaded or will be carried, as appropriate.

6.4. Aircrew Publications Requirements. Primary crew members will ensure the publications specified in **Table 6.1** are current and available on the aircraft for all missions. Units may specify additional publications in their local supplement. The use of electronic flight manuals in flight will be for reference purposes only (paper copies are always required). When the crew includes two additional crewmembers in the same specialty (i.e. two loadmasters on airdrop missions) each will carry a checklist but otherwise only one set of publications is required.

Table 6.1. Aircrew Publications.

PUBLICATION
TO 1C-130J-1, *Flight Manual*
TO 1C-130J-1-1, TO 1C-130(C)J-1-1, *Flight Manual Performance Data*
TO 1C-130J-1-4 *Communication/Navigation/Identification Management System (CNI-MS) Operator Manual*
Abbreviated Checklists
TO 1C-130J-9, *Cargo Loading Manual*
AFI 11-202 Volume 3, *General Flight Rules*
AFI 11-2C-130J Volume 3, *C-130J Operations Procedures*
AFI 13-217, *Drop Zone and Landing Zone Operations*
AFI 11-231, *Computed Air Release Point Procedures* (airdrop qualified only)
AFTTP 3-3.C-130J *Combat Aircraft Fundamentals C-130J*
AFTTP 3-3.C-130J *Combat Mission Guide*

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.

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. GDSS2 Account. Pilots will obtain an GDSS2 account prior to operating on IFM-planned sorties. Download aircrew departure papers using the GDSS2 account, at locations without an AMC C2 presence. For operational missions, ensure GDSS2 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. If an electronic sign-in system is used (i.e., PEX), then FCIF currency will be verified appropriately utilizing that system.

6.8.2. Crewmembers delinquent in FCIF review or joining a mission en route will receive an FCIF update from a primary aircrew member counterpart on the mission.

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. This applies to all crewmembers if the electronic sign in system is not working properly at alert time.

6.9. Flight Crew Bulletins (FCB). Group Standardization and Evaluation (OGV/AGV) is the office of primary responsibility (OPR) for FCBs. Items in FCBs 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.

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*

6.10.1.3. *AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipments.*

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

6.10.1.5. *AMC Aircrew Border Clearance Guide.

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

6.10.1.7. *Flight Crew Bulletin (FCB).

6.10.1.8. Airfield Suitability and Restrictions Report (ASRR) (if available).

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

6.10.2. Forms:

6.10.2.1. DD1351-2, **Travel Voucher or Sub Voucher**.

6.10.2.2. DD1351-2C, **Travel Voucher or Sub Voucher (Continuation Sheet)**.

6.10.2.3. *CBP Form 6059B, **US Customs and Border Protection Declaration Form**.

6.10.2.4. DD1748-2, **Airdrop Malfunction Report (Personnel-Cargo)**.

6.10.2.5. *DD2131, **Cargo/Passenger Manifest**.

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

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

6.10.2.8. *AF Form 315, **United States Air Force AvFuels Invoice**.

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

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

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

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

6.10.2.13. AF Form 3211, **Customer Comments**.

6.10.2.14. AMC Form 43, **AMC Transient Aircrew Comments**.

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

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

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

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

6.10.2.19. Japanese Customs Service Forms.

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

6.10.2.21. *SF 44, **Purchase Order-Invoice-Voucher.**

6.10.3. Orders:

6.10.3.1. DD Form 1610, **Request and Authorization for TDY Travel of Dodd Personnel**.

6.10.3.2. AF Form1631, **NATO Travel Orders (when required**).

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

6.10.4. Miscellaneous:

6.10.4.1. *Box car seals.

6.10.4.2. *Masking tape.

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):	Number
FLIP GP Planning (sections GP, AP/1, AP/1B, AP/2, AP/3)	1
FLIP IFR Supplement	1
FLIP Flight Information Handbook	1
FLIP Enroute (high and low)	2
FLIP Instrument Approach Procedures (high and low)	2
Standard Terminal Arrival Routes (STAR)	2
FLIP VFR Supplement	1
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. PIC Briefing. Cover all applicable items of the operations briefing, including MAJCOM, NAF, and unit special interest items (SIIs). Brief crewmembers on the specific mission details if not previously accomplished. Use approved briefing guides; reference AFTTP 3-3.C-130J, Combat Mission Guide. For tactical missions, additional briefings may be required.

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.

6.12.2.2. NVG Briefing Requirements. For missions conducting NVG operations, crews will review and coordinate NVG failure procedures for all phases of the mission. Discuss actions for Smoke and Fumes in the aircraft. The PIC will consider crew experience, mission priority, and Intel, tactics and threat briefings in determining if the mission can be completed safely should NVGs fail.

6.12.3. 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.

6.12.3.1. Aircrews flying flight-managed sorties will use the weather briefing provided with the IFM aircrew departure papers. 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 AOC/AMD) as the final arbiter for weather-related issues and further updates.

6.12.3.2. 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.

6.12.3.3. 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.

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

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

6.12.4. 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.

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

6.12.6. 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.

6.13. 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 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 signs are reserved for the AMC/CC and 18 AF/CC.

6.13.4. 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.

6.13.5. Search and Rescue. On actual search, rescue, and recovery missions, use the call sign "Air Force Rescue" plus the last five digits of the aircraft tail number.

6.14. Instrument Flight Rules. Conduct flight operations under IFR to the maximum extent possible without unacceptable mission degradation. This does not preclude VFR training to maintain proficiency in mission essential VFR operations.

6.15. Flight Plan/Data 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 MAJCOM validated 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 flight-managed 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.

6.15.2. All waypoint data retrieved from a database should be verified by one or more of the following methods:

6.15.2.1. Latitude/longitude from current FLIP.

6.15.2.2. Bearing/distance from a flight plan.

6.15.2.3. Ground Based NAVAIDs.

6.15.3. When conducting DZ/LZ operations, both pilots will verify CNI-MU CARP/LZ information with a valid DZ/LZ survey. Refer to AFI 13-217 for DZ/LZ survey information/requirements/applicability.

6.16. Departure Planning. Use AFI 11-202V3, AFMAN 11-217, this chapter, and the appropriate MAJCOM supplements. Regardless of the type of departure flown (IFR/VFR), review the following (as appropriate): IFR Departure Procedure, instrument approach plate, NOTAMS, GDSS Giant Report, and suitable terrain charts. To verify CNI TOLD, both pilots will cross-check CNI TOLD INIT entries and the PM will compare CNI TOLD outputs (if required by flight manual) to the data obtained from the performance manual, tab data, or MAJCOM approved Flight Performance Module (FPM). The minimum outputs that must be checked and the allowable tolerances for those outputs are outlined in the performance manual.

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. 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 (SH)/departure end of runway (DER) requirements for IFR departure planning (AFMAN 11-217V1).

6.16.2.2.1.□□□□□□ TOLD. Enter the required climb gradient, altitude(s), screen height, and obstruction distance. For an IFR departure, aircraft weight must be less than or equal to the calculated maximum aircraft weight for the type of three-engine departure listed (normal or 50-flap at obstacle clearance speed).

6.16.2.2.2.□□□□□□ Standard screen heights are listed below: ***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.

6.16.2.2.3.□□□□□□ Special Departure Procedure: Published on SDP.

6.16.2.2.4.□□□□□□ USAF/USN produced departure or USAF/USN/USMC airfield: Zero feet.

6.16.2.2.5.□□□□□□ US Army, FAA departure, and Joint Use Airfield within the US: 35 feet or as published.

6.16.2.2.6.□□□□□□ All others: 35 feet or as published.

6.16.2.3. Aircraft must 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 more favorable conditions exist.

6.16.2.4. Use one of the following methods to ensure the aircraft can vertically clear all obstacles along the planned departure route with OEI:

6.16.2.4.1.□□□□□□ Special Departure Procedure (SDP). SDPs are MDS-specific OEI escape procedures intended only for emergency use. They are applicable after the loss of an engine and, where available, will be used for engine-out departure planning. Retrieve current SDPs from the Jeppesen AFOpsdata website: **https://www.jeppesen.com/wlcs/commerce/login.jsp**. User name: afopsdata; password: jeppesen. _Ad hoc‘ requests for fields not currently listed may be requested through OGV NLT 48 hrs prior to scheduled departure. HQ AMC/A3V authorizes the use of Ad Hoc SDPs for a maximum of 30 days after the analysis date. The SDP analysis date is located in the upper left-hand corner of the takeoff performance sheet.

6.16.2.4.2.□□□□□□ Minimum 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. If an SDP is not available, the crew 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. When required for mission accomplishment, crews may subtract 48‘/nm from published climb gradients before computing engine-out takeoff data. 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). Crews must also ensure the aircraft can clear these obstacles. ***NOTE:*** If the requirements of 6.16.2.4. cannot be met, download cargo/fuel or delay until more favorable conditions exist.

6.17. Weather Minimums For Takeoff. Use **Table 6.3** and AFI 11-202V3.

Table 6.3. Weather Minimums For Takeoff.

MISSION	VIS	REMARKS
Operational	1000 RVR	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	For runways with more than one operating RVR readout, RVR must read 1600 minimum on all.
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.

6.19. Departure Alternates.

6.19.1. A departure alternate is required if weather is below landing minimums for the available approach (at departure aerodrome). Do not use CAT II ILS minimums to determine if a departure alternate is required.

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 2 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 (NOAA) 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 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. 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.

6.20.4. When filing to a destination where the alternate is located in Alaska or at latitudes greater than 59°N, see **Chapter 14** for fuel planning considerations.

6.21. Adverse Weather.

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

6.21.1.1. Anytime windshear may be encountered on departure or approach, it is recommended that aircrews select weather mode on one NAV RADAR display and windshear mode on another NAV RADAR display.

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.

6.21.2.1. Do not takeoff under conditions of freezing rain or freezing drizzle.

6.21.2.2. Freezing precipitation, snow, freezing fog (consider equivalent to moderate icing), 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 are located on the CoP: (**https://wwwd.my.af.mil/afknprod/ASPs/CoP/OpenCoP.asp?Filter=OO-OT-SA-03**). 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 clear thunderstorms or cumulonimbus clouds by at least 2000 feet vertically, 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 FL 230.

6.21.3.3. 5 NMs for tactical low-level operations. Avoid gust fronts and winds preceding a rapidly moving thunderstorm. ***CAUTION:*** Aircraft damage may occur 20 NMs 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 advected 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 5 NMs separation from heavy rain showers

6.21.6.3. Avoid prolonged flight in 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, and in any intensity of precipitation or turbulence associated with thunderstorm activity. ***NOTE***: Approaches or departures may be accomplished when thunderstorms are within 10 NMs 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 the *Flight Information Handbook* (FIH) Section D, Temperature Correction Chart, to correct MDA, DH, and other altitudes inside the FAF.

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 the 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.

6.22. 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.

6.22.1. Flying units will develop a local ORM program to include personal ORM risk assessment for all missions.

6.22.2. The PIC will ensure an ORM risk assessment is accomplished by all crewmembers as part of pre-flight activities.

Section 6C— Pre-Flight

6.23. AFTO Forms 781 Series.

6.23.1. Review AFTO Forms 781 series before applying power to the aircraft or operating aircraft systems. An exceptional/conditional release must be signed before flight. A maintenance officer, maintenance superintendent, or authorized civilian normally signs the exceptional/conditional release. If one of these individuals is not available, the PIC may sign the exceptional/conditional release. When a release is signed by the PIC, it is effective only for those flights in which the releasing PIC participates as an aircrew member. Ensure that the DD1896, **Jet 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.

6.24.1. Aircraft Refueling. Aircrew members qualified in ground refueling may perform refueling duties. Crew members acting as refueling supervisors and panel operators will comply with T.O. 00-25-172 and refueling job guide. Aircrews will only refuel in cases when maintenance support is not readily available and the mission would be delayed. Crew members may augment maintenance refueling teams at enroute stops.

6.24.2. Aircrew Dash One Preflight Inspection Requirements.

6.24.2.1. The aircrew dash one preflight inspection will remain valid until either:

6.24.2.1.1. Aircraft ground time exceeds 12 hours (72 hours provided the aircraft is sealed, not flown, and documented entry control is maintained).

6.24.2.1.2. Another maintenance dash six preflight is performed.

6.24.2.2. When an aircrew assumes a preflighted spare or quick turn, a thorough visual inspection will be performed.

6.24.3. Fire Protection and Crash Rescue. See AFI 13-217 and any MAJCOM specific guidance (i.e. AMCI 11-208) for specific Fire Fighting and Rescue requirements. When required, the user will preposition suitable equipment at the LZ prior to conducting operations.

6.24.3.1. The aircraft engine fire extinguisher system fulfills the minimum requirements for fire protection during engine start.

6.24.3.2. A fire guard is required for all engine starts except normal APU starts. The loadmaster or ground controller may act as fire guard.

6.24.4. Aircrew and Maintenance Engine Runs.

6.24.4.1. A mixture of aircrew and maintenance personnel will not normally accomplish engine runs. When an aircrew member is required to start or run up engines for maintenance purposes, the following procedures apply:

6.24.4.1.1. Maintenance personnel will accomplish all necessary inspections and preparations for the engine run. These actions include but are not limited to: intake/exhaust inspections, access panel security servicing, and AFTO Form 781 documentation.

6.24.4.1.2. Use the pilot and loadmaster checklists. Begin with the "power up checklist," and complete all appropriate checklists through the "before leaving airplane" checklist.

6.24.4.1.3. Only deviate from the flight crew checklist when maintenance requires less than four engines to be started.

6.24.4.1.4. Operate symmetrical engines when power settings above ground idle are required.

6.25. Aircraft Recovery Away from Main Operating Base. The PIC is responsible for ensuring the aircraft is turned to meet subsequent mission taskings, even when qualified maintenance specialists are unavailable.

6.25.1. The PIC is responsible for the recovery items including:

6.25.1.1. Parking and receiving.

6.25.1.2. Aircraft servicing, including Aircraft Ground Equipment (AGE) usage.

6.25.1.3. Supervision of minor maintenance within local capability.

6.25.1.4. Minor configuration changes to meet mission tasking.

6.25.1.5. Securing the aircraft before entering crew rest.

6.25.1.6. Coordinating aircraft security requirements.

6.25.1.7. Documenting AFTO 781-series forms.

6.25.2. In all cases where aircrews must service the aircraft without qualified maintenance specialist assistance, comply with the appropriate maintenance T.O.

6.25.3. 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.

6.26. Aircrew Flight Equipment Requirements.

6.26.1. Oxygen. Oxygen on board for takeoff must be sufficient to accomplish the planned flight from the equal time point (ETP) to a suitable recovery base, should oxygen be required (minimum 5 liters for all flights). Calculate crew requirements using the 100 percent Oxygen Duration Chart in the flight manual at 10,000 ft.

6.26.1.1. Crewmembers occupying a crew station will have an oxygen mask connected and readily available for use from before engine start until engine shutdown.

6.26.1.2. Normally, unpressurized flight will not be planned above 18,000 feet cabin altitude (except HALO). Aircrews required to fly unpressurized missions above 18,000 will prebreathe 100 percent oxygen in accordance with Chapter 19.

6.26.1.3. Crewmembers who do not have access to the aircraft oxygen system will have a PBE, or EPOS within arm's reach for flights above 10,000 feet.

6.26.1.4. On missions carrying passengers, distribute EPOS (if available) to each passenger regardless of planned flight altitude. EPOS will be distributed and their use demonstrated before departure.

6.26.1.5. Do not remove the loadmasters' emergency equipment (cargo compartment quick dons/smoke masks) for use by flight deck crew members.

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

6.26.3. Life preserver units (LPUs). The loadmaster will place an LPU within easy reach of each passenger and aircrew member before takeoff on overwater flights. Crewmembers will fit and adjust LPUs for overwater flights and will wear them on overwater missions below 2,000 feet. (***EXCEPTION***: LPUs need not be worn for takeoffs, landings, or approaches). Ensure the appropriate number and type of life preservers are aboard for overwater missions carrying children and infants.

6.26.4. Parachutes:

6.26.4.1. Personnel performing duties near an open (or suspected open) door/hatch/ramp in-flight will be restrained by a safety harness, or wear a parachute.

6.26.4.2. Either wear, or have prefit and prepositioned, parachutes and helmets during specified combat conditions. Loadmasters will wear a restraining harness instead of a parachute during airdrops below 800 feet AGL or when performing duties near an open exit above 14,000 MSL.

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. AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipment*, 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 AFMAN 24-204 are complied with when airlifting hazardous cargo.

6.29.1.1. MAJCOM Instructions (i.e. AMCI 11-214) may be provided to crew members in order to consolidate and streamline the information from several hazardous material regulations. This does not preclude aircrew from the responsibility of the parent regulation.

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.

6.29.2.2. 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 Procedures. Handling of Classified Cargo, Registered Mail, Mission Capable (MICAP) Parts, 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, **Cargo Manifest** 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, for unit moves. The PIC, or designated representative, will be briefed on the urgency of the shipment and be made the custodian during flight.

Section 6D— Departure

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

6.31.1. Scheduled takeoff time may be adjusted to make good a time over target (TOT) or time of arrival (TOA). Notify C2 prior to 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. NVG Departures.

6.32.1. NVG Departure Weather Minimums. Weather minimums for NVG departures for pilots who are non-current and/or unqualified is 1500/3. Weather minimums for NVG departures for pilots who are current and qualified is 1 mile visibility. Crews must give careful consideration to potential hazards during the critical phase of flight. Other weather limitations are IAW this instruction and AFI 11-202V3. NVGs have inherent limitations which can further be reduced by poor weather conditions. Crews will consider weather conditions, moon illumination and position, sky glow at dawn and dusk, cultural lighting, and weapon/expendable effects when planning NVG operations.

6.32.2. NVG Malfunctions During Takeoff. During an NVG takeoff, if the PF experiences NVG failure takeoff may be continued at the discretion of the PIC. If NVG malfunctions

occur after the PM states ―rotate‖, consideration should be given to either continuing the takeoff as the PF transitions to an IMC takeoff or transferring control of the aircraft as the situation dictates. If either pilot‘s NVGs fail after takeoff, continue the climb out and follow the appropriate procedures for loss of NVGs. The PM will be ready to immediately assume aircraft control if the PF experiences spatial disorientation or an NVG malfunction. Pilots must exercise sound and conservative judgment to continue NVG operations with aircraft malfunctions.

Section 6E— Enroute

6.33. Flight Progress. In-flight, use all available navigational aids to monitor Mission Computer performance. 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 procedures to monitor flight progress.

6.33.1. .1. 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 Attaché Officers (DAOs).

6.33.1.1. 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.

6.33.1.2. Consistent with international law, the US recognizes sea claims up to 12 NMs. 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 12 NMs; however, specific guidance from certain US authorities may establish limits, which differ from the standard.

6.33.1.3. Flight Information Region (FIR). A FIR is an area of airspace within which flight information and related services are provided. A 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.

6.33.1.4. 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).

6.33.1.5. 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.

6.33.1.6. 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.

6.33.1.7. In the event ATC agency challenges the validity of a flight routing or attempts to negate existing clearances, pilots 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.

6.33.1.8. 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.

6.33.1.9. Aircrews (except on weather reconnaissance missions) normally are not tasked to and should 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 AC to be their own ATC agency to separate their aircraft from all other air traffic. If operational requirements dictate, PIC may exercise the "due regard" option to protect their aircraft. Aircraft will return to normal air traffic services as soon as practical.

6.34. Navigational Aid Capability. The following airspace categories are each defined in FLIP, and are considered special qualification airspace: MNPS, RVSM, RNP, and BRNAV. For further details about specific airspace procedures and restrictions, see **Chapter 11**.

6.35. Communications Instructions Reporting Vital Intelligence Sightings 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 and 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 should conduct an HF radio ground check before takeoff if use of the HF radio may be required for ATC or C2 communications. 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.

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 shall 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 shall 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 when additional expertise is necessary. Communications procedures are as follow:

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.

6.39. 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.

6.39.1. Suspected Laser Exposure. If exposed to a laser, the aircraft commander will ensure appropriate command and control, intelligence, safety, and medical agencies are notified as soon as possible. Aircrew who suspect exposure to laser radiation from either friendly or hostile sources should report to the Flight Surgeon‘s Office or nearest emergency room where individual can be examined by an ophthalmologist immediately upon landing.

6.40. Weather Forecasts. It is the pilot‘s responsibility to obtain destination weather prior to descent. The primary sources are 618 TACC weather operations, OWSs, and USAF weather flights via pilot-to-meteorologist service (PMSV) or through a USAF aeronautical station. Refer

to the Flight Information Handbook (FIH) for weather agency contact information. 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.

6.41.1.1. A visual approach may be flown during night VFR conditions if an approved instrument approach to the landing runway is not available or operational missions require a tactical approach.

6.41.1.2. On training/evaluation flights, pilots may fly non-precision approaches or VFR traffic patterns to accomplish required training and evaluations. The PM will monitor a precision approach when practical to enhance safety.

6.41.1.3. For recovery at home station, pilots may elect to fly a visual or non-precision approach, if weather minimums permit.

6.42. Instrument Approach Procedures.

6.42.1. Aircraft category. The C-130J is a category "C" aircraft. If approach speeds exceed 140 knots, the minimums for category "D" 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 sidestep approaches. ***NOTE:*** See **Chapter 14** for visibility only fuel requirements.

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.

6.42.3.1.2.□□□□□□ CAT I ILS Procedures. Decision height for precision approaches will be as published, but no lower than a 200 ft height above touchdown (HAT).

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:

6.42.3.2.1.□.□□□□6□ Category C - 500 ft - 1 1/2 SM.

6.42.3.2.1.□.□□□□6□ Category D - 600 ft - 2 SM.

6.42.3.3. Increase the published visibility minimums of an instrument approach by ½ 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.).

6.42.4. Flight Instrumentation Requirements.

6.42.4.1. Full flight instrumentation for a CAT I ILS and precision radar approach (PAR) includes a HUD or PFD at each station, and no shared CADC or INU attitude reference.

6.42.4.2. Full flight instrumentation for a CAT II ILS includes an operational HUD in the PF position, a HUD or PFD at the PM position, and meeting the flight manual CAT II ILS criteria.

6.42.4.3. Aircraft are limited to a DH/MDA based on a HAT of 300 feet and RVR 40 or 3/4 SM visibility (1220 meters) with no RVR if full flight instrumentation is not operational.

6.42.5. ILS Precision Runway Monitor (PRM) Approaches. Both pilots must be certified to conduct an ILS PRM approach. Comply with the following operational procedures:

6.42.5.1. Two operational VHF communication radios are required.

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

6.42.5.3. 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.

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

6.42.5.5. 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.

6.42.6. CAT II ILS Procedures. DH is based on radar altitude. Minimum HAT is 100 feet. Minimum RVR is 1200. Maximum crosswind limitation is 10 knots. Crosswind of 15 knots may be used for training approaches (requires weather of 200 – ½ or greater).

6.42.6.1. The following airfield and aircraft equipment must be operational (AFMAN 11-230, *Instrument Procedures*).

6.42.6.1.1.□□□□□□ Approach

lights. 6.42.6.1.2. Runway centerline

lighting.

6.42.6.1.3.□□□□□□ High intensity runway lights or touchdown zone lights.

6.42.6.1.4.□□□□□□ Approach end

transmissometer. 6.42.6.1.5. ILS far field

monitor.

6.42.6.1.6. Sequenced flashers.

6.42.6.2. Aircrews will not execute an IMC CAT II ILS to minimums unless both pilots are qualified and current in CAT II ILS.

6.42.6.3. When performing CAT II ILS procedures on a CAT I ILS for training/evaluations, the DH is the HAT for the CAT I ILS.

6.42.6.4. Refer to AFI 11-217 Vol. 1 regarding equipment failure and go-around criteria.

6.42.7. NDB Procedures. The HUD alone is not sufficient for NDB approaches. A head-down display, which depicts a bearing pointer tuned to the NDB, must be used in conjunction with the HUD throughout the approach. NDB approaches may be flown during day, night, or IMC conditions after compliance with any airfield restrictions in GDSS/GDSS2/ASRR. Pilots should consider backing up each approach with available navaids/GPS to include loading the NDB coordinates in the FMS.

6.42.8. Self Contained Approaches (SCA) (IPRA and LZ approaches). See AFI 11-202V3

6.42.8.1. IMC Restrictions: Approaches may only be accomplished from a published SCA developed IAW AFI 11-202V3. Units must submit SCA to MAJCOM TERPS office for review and receive MAJCOM/A3 approval. Weather minimums for the SCA will be determined in the TERPS review based upon required navigation performance (RNP) criteria. Ceiling will be no lower than 300 ft and visibility will be no lower than RVR 4800 or 1 SM (1600 meters).

6.42.8.1.1.□□□□□□ FOM of 4 or less on both

Navigation Solutions. 6.42.8.1.2. Both Pilots must verify

RPI or LZ coordinates.

6.42.8.1.3. Pos Alert 1 and Alert 2 must be set to 0.03 and 0.05 respectively.

6.42.8.1.4. No INAV POS MISCOMPARE / DIFFERENCE ACAWS.

6.42.8.1.5. SHIP SOLN INAV 2 must be selected for IPRA Approaches.

6.42.9. After Beginning an Enroute Descent. IAW AFI 11-202V3, after starting an enroute descent, and the weather is reported or observed to be below approach minimums, the PIC has the option of continuing the approach to the MAP/DH. Comply with the last assigned clearance until a new or amended clearance is received. ***EXCEPTION:*** Do not continue a CAT II ILS if the weather is reported to be below CAT II minimums.

6.42.9.1. 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.

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

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

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

6.42.10.1. 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.

6.42.10.2. Destination weather is forecast to be at or above minimums before excess fuel will be consumed.

6.43. NVG Approach and Landing.

6.43.1. NVG Approach Weather Minimums. Weather minimums for NVG visual approaches, NVG visual pattern work, and pilots who are non-current and/or unqualified is 1500/3. Current and qualified NVG aircrews may fly IFR approaches with weather at approach minimums. Crews must give careful consideration to the potential hazards during these critical phases of flight. Other weather limitations are IAW this instruction and AFI 11-202V3.

6.43.2. NVG Malfunction during Approach and Landing. If one of the pilots experience NVG failure on short final, it will be at the discretion of the PIC whether or not to transition to normal lights or perform a go-around. The PM will be ready to immediately assume aircraft control if the PF experiences spatial disorientation or an NVG malfunction. Pilots must exercise sound and conservative judgment to continue NVG operations with aircraft malfunctions. Tactical and safety considerations will dictate the final course of action.

6.44. Unscheduled Landings. When an unscheduled landing or crew rest occurs at a base without a passenger facility, the AC 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 organic aircraft flying a Transportation Working Capital Fund (TWCF) mission, which incur an unscheduled delay due to weather or maintenance problems, forcing the members to be lodged at that location until the aircraft can continue its mission. **NOTE**: These procedures do not apply to those passengers traveling on delayed C-130J aircraft flying TWCF missions who are authorized per diem on their individual travel orders or in a space available status.

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 C-130J 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 C-130J 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.

6.45. Maintenance. Complete the AFTO Form 781 after each flight. After landing, crew members 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 AC will ensure a thorough debrief is provided to the C2 agency. On AMC missions, notify 618 TACC Logistics Control (618 TACC/XOCL).

6.45.1. An entry will be placed in AFTO 781A "Aircraft Subjected to Salt Spray" (state lowest altitude and duration) anytime the aircraft is flown under 3000 feet above sea except for takeoffs and landings.

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 to the loadmaster, but the PIC retains ultimate responsibility. When a C-130J aircraft is on-loaded 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 loadmaster will distribute personal customs declarations (when not accomplished by passenger services) to all passengers, troops, and crewmembers.

The loadmaster 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 that 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, to 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 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 (i.e. flare safety check) or the preservation of life and property (loadmaster 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, ACs 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 they protest the course of action being pursued and that they intend 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.□.□□□□6□ Cargo manifest.

6.46.4.3.2.□.□□□□6□ For troops out of country less than 140 days:

6.46.4.3.2.□.□.□□6□6□ Troop commander's certificate for examination of troop baggage.

6.46.4.3.2.□.□.□□6□6□ 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.□.□.□□6□6□ 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.□.□.□□6□6□ 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.□.□□□□6□ For troops who are out of the country 140 days or more:

6.46.4.3.2.□.□.□□6□6□ 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.□.□.□□6□6□ 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.□.□□□□6□ One copy of Customs Form 7507 (found at **http://www.customs.gov**).

6.46.4.6. Agriculture Procedures:

6.46.4.6.1. Outbound: No requirement.

6.46.4.6.2.□□□□□□ Inbound: Consult AMC Border Clearance Guide.

6.46.4.6.2.□.□□□□6□ 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/cargo are to be thoroughly cleaned of mud, dirt, sand, and other foreign material 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.□.□□□□6□ 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.□.□□□□6□ 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.□.□□□□6□ 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.□.□□□□6□ 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 105 seconds unless longer periods are specified for the country being transited. ***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, airfield management 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. Cockpit Voice Recorder (CVR). If involved in a mishap or incident, after landing and terminating the emergency, pull the CVR power circuit breaker (ECB #464).

6.50. Aircrew Flight Equipment 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 aircrew flight equipment have been certified as installed by aircrew flight equipment and that configuration documents match mission requirements. Ensure appropriate number and type of life preservers are aboard for over-water missions carrying children and infants.

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

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

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 AC 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 aircrew flight equipment 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. No-show passenger baggage or baggage of passengers removed from flight will be downloaded prior to departure. See exception at paragraph **13.4.2.6**.

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 MAJCOM Stan/Eval, who will forward 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 AC should impound the aircraft immediately after landing and contact the controlling C2 agency for further instructions.

6.54. Cockpit Congestion and Loose Objects.

6.54.1. The maximum number of persons on the flight deck will be the minimum commensurate with the mission requirements. At no time should this exceed six (unless otherwise specified in a MAJCOM supplement to this AFI).

6.54.2. No items (checklists, charts, etc.) will be placed on the power lever quadrant during critical phases of flight.

6.54.3. Place only soft items on the top bunk.

6.54.4. Store only the minimum amount of professional gear required to accomplish the mission on the flight deck. Additional items will be secured in the cargo compartment. All items will be secured before passing the combat entry point through the combat exit point.

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) section 5-37 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 (ANG/DO for ANG-directed missions, AFRC command center for AFRC-directed missions).

6.57. Ordnance Procedures. Conduct the following procedures after the live firing of chaff/flares or the crew suspects aircraft battle damage:

6.57.1. After landing, taxi to the de-arm area or another suitable safe location to check for hung ordnance.

6.57.2. The loadmaster or another qualified crewmember will deplane the aircraft and check all chaff/flare dispensers for hung ordnance or damage. ***NOTE:*** ALE-47 flare squibs that fail to fire are not considered hung ordnance.

6.57.3. If hung ordnance is found, identified by a protruding or partially ejected flare cartridge, the aircraft will remain in a de-arm area until Explosive Ordnance Disposal (EOD)

personnel meet the aircraft. The aircraft must remain in the designated safe area until EOD personnel can clear all hung ordnance.

6.57.4. If hung ordnance is not found, the aircraft can proceed to the parking location.

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

6.58.1. Equipment. When classified equipment is onboard, ensure the C2 Center or airfield management 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, lock and seal the aircraft. If available, use RAVENS to guard the aircraft; otherwise, use guards employed by the host country for flightline/airport area control. Do not leave unguarded classified information stored in navigation or radio equipment.

6.58.2. 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. If a storage facility is not available, the aircraft gun storage box is GSA approved, and may be used for material classified up to and including SECRET. Encrypted COMSEC will only be transferred to authorized DoD personnel.

6.58.3. Aircrews will ensure that they have an operable Mode IV when required for mission accomplishment. Aircrews will conduct an operational ground test of the Mode IV (ground test assets permitting) before deployment overseas, or as specified in the OPORD or contingency/exercise tasking.

6.58.4. Attempt to fix an inoperable Mode IV 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.

6.58.5. Conduct an in-flight check of the Mode IV on all missions departing the CONUS for overseas locations. Aircrews can request the Mode IV interrogation check through NORAD on UHF frequency 364.2.

6.58.6. Aircraft with inoperable Mode IV 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 IV as directed in the applicable airspace control order or Air Tasking Order (ATO).

6.58.7. round 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 IV on all aircraft forms (AFTO FORM 781A).

6.58.8. Aircrews will carry COMSEC equipment and documents required to operate the Mode IV 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.

Chapter 7

AIRCRAFT SECURITY

7.1. General. This chapter provides guidance on aircraft security and preventing and resisting aircraft piracy (hijacking) of the C-130J 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-130J 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, *The Air Force Installation Security Program*, requirements for C-130J aircraft:

7.3.1. The aircraft will be parked in an established restricted area and afforded protection via a roving patrol, a two-person Internal Security Response Team (ISRT), with immediate response not to exceed 3 minutes, and a two-person External Security Response Team, (ESRT) with response capability within 5 minutes.

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. Provide a one-person mobile patrol, supported by a two-person ISRT capable of a 5minute response. Portable security lighting will be provided during the hours of darkness if sufficient permanent lighting is not available.

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 crew members. Security force support terminates only after the aircraft doors are closed and the aircraft taxis.

7.3.6. Locking and Sealing. Lock or seal the aircraft during a ―Remain over night‖ (RON) on non-secure ramps (see paragraph **7.5.1**.).

7.4. Standby Aircraft Security. Ensure aircraft hatches and doors are secure to show unauthorized entry; seal the crew entrance door with a lock box, or other controllable device, which will prevent entry without damaging the door or lock. 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-flight 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 MEP status and is responsible to the PIC at all times. In turn, the PIC is responsible for its welfare (transportation, lodging, etc.). Ensure security team members receive a mission briefing, 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 crew members 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 and avionics compartments 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 Air Transportation Act of 1974 and the Federal Aviation Act of 1958, as amended, vest the FAA Administrator with exclusive responsibility for the direction of law enforcement activity in aircraft hijacking situations involving all aircraft (civil and military) in-flight in the United States.

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 PIC 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-130J is operating away from home station, the PIC will comply with this chapter and AFI 13-207, 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.

7.8.1.1. The Transportation Security Administration provides the latest guidance on passenger screening and carry on allowances. The latest guidance can be downloaded from **www.tsa.gov/press/happenings/index.shtm**.

7.8.1.1.1.□□□□□□ Aircrew must ensure that thorough screenings are accomplished when processing passengers at locations without an AMC Passenger Terminal.

7.8.1.1.2.□□□□□□ Carry-on restrictions apply to all passengers required to process through the passenger terminal, or equivalent when at a non-AMC location. Carry-on restrictions do not apply to those not required to process through the passenger terminal, or equivalent when at a non-AMC locations. This includes:

7.8.1.1.2.□.□□□□7□ Aircrew members listed on the Flight Authorization

for that mission. 7.8.1.1.2.2. MEPs for that mission.

7.8.1.1.2.□.□□□□7□ OSA/VIPSAM passenger not required to process through the Passenger Terminal (primary DV, spouses/party, aides, and security details only).

7.8.1.1.2.□.□□□□7□ Duty passengers on ANG/AFRC mission numbers.

7.8.1.1.3.□□□□□□ Consider baggage contained in areas not readily accessible in flight as checked baggage, even if carried to the aircraft by the passengers. This includes, but is not limited to: segregated baggage compartments, floor loaded baggage tied down with cargo straps/chains, palletized baggage, and baggage in baggage bins.

7.8.1.1.4.□□□□□□ Brief non-exempt passengers that baggage in these areas is not to be accessed in flight. If any non-exempt passenger attempts to access checked baggage in-flight, land the aircraft at the nearest suitable airport (preferably a military facility) with appropriate law enforcement personnel. Request assistance in removing the

passenger(s) and accompanying baggage from the aircraft. Comply with all law enforcement direction.

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.

7.8.2.1. For AE missions, the MCD is the final authority for determining what items can be carried by/for AE patients.

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 ―frag‖ 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/aircraft commander 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, 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.

7.10.6. In any suspected or actual hijack attempt, the aircrew basic objective is to get the aircraft on the ground quickly as possible and to keep it there. If the pilot needs to land quickly, the pilot will request an emergency descent clearance from ATC.

7.11. Communications Between Aircrew and Ground Agencies. Crews facing a hijacking threat will transmit an in-the-clear notification of hijacking to ATC. Notify ground agencies 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 Crew Members. When crews are directed to carry weapons, at least one pilot (or extra flight deck crew member) and one loadmaster will be armed. All crew members 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. Crew members 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 crew members. 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, 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. Crew members will be armed before beginning preflight, on-load or off-load duties and until completion of all post-flight duties. When no passengers are aboard, weapons may be stored in the gun box in-flight after a satisfactory stowaway check. Crew members 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, including stage crews, will store weapons and ammunition in the most secure facility available, normally the base armory.

7.13.4.2. Non-stage aircrews may store weapons and ammunition in the aircraft gun box.

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. Crew members 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 31-210, *The Air Force Antiterrorism/Force Protection (AT/FP) Program Standards,* 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. 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 91-202, and AFMAN 91-223, *Aviation Safety Investigations and Reports*, list HATR reportable incidents. Report the details on AF Form 651 within 24 hours to the base safety office if you are at the Air Force base where the incident occurred. Submit the form to the nearest US Air Force Base Safety Office after landing if the incident occurred during flight.

8.3.2. If you have a near midair collision, inform the nearest air traffic control agency or flight service station and provide the following information:

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, etc) of the incident.

8.3.2.3. Altitude or flight level.

8.3.2.4. Description of the other aircraft.

8.3.2.5. Advise the agency that you intend to file a written Near Midair Collision Report and request that the controllers save all available data.

8.3.3. To encourage reporting, individuals submitting HATRs are granted immunity from disciplinary action if:

8.3.3.1. Their violation was not deliberate, if they were the offending party.

8.3.3.2. They committed no criminal offense.

8.3.3.3. Their actions did not result in a mishap.

8.3.3.4. They properly reported the incident.

8.4. AMC FORM 97, AMC In-Flight Emergency and Unusual Occurrence Worksheet. The AMC FORM 97 is a tool to notify appropriate authorities of any mishap 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, *Safety Investigations and Reports*, 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). These include:

8.4.1.1.1. Proven or suspected case(s) of hypoxia.

8.4.1.1.2. Carbon monoxide poisoning or other toxic exposure.

8.4.1.1.3. Decompression sickness due to evolved gas (bends, chokes, neurocirculatory collapse), or severe reaction to trapped gas that results in incapacitation.

8.4.1.1.4. Hyperventilation.

8.4.1.1.5. Spatial disorientation or distraction that results in an unusual attitude.

8.4.1.1.6. Loss of consciousness regardless of cause.

8.4.1.1.7. Death by natural causes of any crewmember during flight.

8.4.1.1.8. Unintentional loss of pressurization if cabin altitude is above FL180, regardless of effects on people on board.

8.4.1.1.9. Inappropriate use of alcohol and effects of hangover that affect in-flight duties (crewmembers only).

8.4.1.1.10. Illness (both acute and preexisting), including food poisoning, dehydration, myocardial infarction, seizure, and so forth.

8.4.1.1.11. Exposure to toxic, noxious, or irritating materials such as smoke, fumes, or liquids. ***NOTE:*** Crewmembers and passengers involved in a physiological episode will see a flight surgeon to complete an AF Form 711GA, **Life Sciences Report of an Individual Involved in an AF Accident/Incident,** Section A, Aircraft Accident/Incident as soon as practical.

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 switchology (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 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.

8.4.2. 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 over 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/drove 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 over 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, 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 in plain text:

8.5.6.1.1.□.□□□□8□ Frequency selected when EMI occurred.

8.5.6.1.1.□.□□□□8□ 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.□.□□□□8□ Description of EMI (noise, pulsed, continuous, intermittent, on so forth).

8.5.6.1.1.□.□□□□8□ Effect EMI had on system performance (reduced range, false targets, reduced intelligibility, data errors, etc.).

8.5.6.1.1.□.□□□□8□ Date(s) and time(s) of EMI.

8.5.6.1.1.□.□□□□8□ Location where EMI occurred (coordinates or line of bearing, if known, otherwise state as unknown.)

8.5.6.1.1.□.□□□□8□ 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.□.□□□□8□ 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.□.□□□□8□ Whether or not PIC wants expert/technical assistance (include level of security clearance expert requires).

8.5.6.1.1.□.□□□□8□ Specify impact the EMI had on your mission.

8.5.6.1.1.□.□□□□8□ 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.

8.6. 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 the MSC card could create financial liability for the purchaser.

8.6.2. Refuel/defuel USAF aircraft at DoD locations whenever 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. ***NOTE:*** DoD FLIP en route supplements identify locations with into-plane contracts.

8.6.2.2. Foreign government air forces.

8.6.3. AVPOL Forms Documentation and Procedures.

8.6.3.1. The DD1898, **Fuel 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. 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. The AF FORM 664, **Aircraft Fuels Documenting Log,** is a tool to log and store all AVPOL transaction forms. Record all off-station transactions on the front of the form and insert the original form inside the envelope. Turn in the AF FORM 664, with supporting forms, to maintenance debriefing or as directed by local procedures. The PIC or designated representative shall complete this form when appropriate.

8.6.3.3. The 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.

8.6.3.3.1.□□□□□□ SF 44 fuel purchases where FBO agrees to invoice DESC for payment.

8.6.3.3.1.□.□□□□8□ 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.

8.6.3.3.1.□.□□□□8□ 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.

8.6.3.3.1.□.□□□□8□ 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).

8.6.3.3.2.□□□□□□ SF 44 fuel purchases where the FBO requires cash payment.

8.6.3.3.2.□.□□□□8□ 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:

8.6.3.3.2.□.□.□□8□8□ 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.

8.6.3.3.2.□.□.□□8□8□ 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.)

8.6.3.3.3.□□□□□□ SF 44 purchases of ground services and other approved products (not fuel).

8.6.3.3.3.□.□□□□8□ 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.

8.6.3.3.4.□□□□□□ 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.

8.6.3.3.5.□□□□□□ Turn in two copies of the SF 44 to the operations officer at home station.

8.6.3.3.6.□□□□□□ 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.

8.6.3.4. Purchasing Aviation Fuel in Canada. The DoD and Canadian Department of National Defence have signed a memorandum of understanding allowing DoD aircraft to use the DD1896, **Jet Fuel Identaplate**, 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.

8.6.3.5. 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.

8.6.3.6. AF Form 1994, **Fuels Issue/Defuel Document,** records 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,** records POL actions for particular airframe IAW applicable directives. The PIC or designated representative shall complete the form and submit to maintenance debrief.

8.6.3.8. DD1896, **Jet 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 SF 44, AF FORM 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

8.7. Not Used.

8.8. AMC Form 54, Aircraft Commander's Report on Services/Facilities. The AMC Form 54 is a tool 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. The AMC Form 196 is a tool 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. AMC Form 43, Transient Aircrew Facilities Report. The AMC Form 43 is a tool to report level of excellence for transient facilities. Any crewmember may submit this report whether or not the PIC includes an unsatisfactory item in the trip report. Send completed AMC Form 43 to HQ AMC/MWPS, or MAJCOM equivalent.

8.11. Not Used.

8.12. DD1748-2, Airdrop Malfunction Report (Personnel-Cargo). The DD1748-2 is a tool to document any airdrop malfunction IAW AFJI 13-210. Consistent with safety, immediately

report off-Drop Zone (DZ) drops/extractions to the controlling agency and proper safety channels. PIC or designated representative shall complete 1748-2 before entering crew rest. (***)EXCEPTION:*** If a malfunction is due to a failure of the static-line retriever or CDS remote timer system, the mission may be continued provided the 80 lb tie on the knife did not break, and the knife did not nick the gate. Use the opposite static line retriever and manually activated the retriever switch at LS 345 (FS 245) or perform a manual gate cut. The DD 1748-2 is not required, but a write-up in the AFTO 781A is required.

8.13. AF Form 4096, Airdrop/Tactical Airland/Air Refueling Mission Recap, SKE/ZM Debrief. The AF Form 4096 is a tool to document details of airdrop, tactical airland, AR, or station keeping equipment SKE) missions. PIC or designated representative shall complete Form 4096 (or command supplement) and submit same to home-station tactics office.

8.14. Operational Forms for Loadmasters. Detailed instructions on the preparation, distribution, and use of the following forms may be found in the governing directive.

8.14.1. DD2131**, Passenger Manifest (AMCI 24-101V14).**

8.14.2. DD1385**, Cargo Manifest (DOD 4500.32R).**

8.14.3. D1854**, US Customs Accompanied Baggage Declaration (DOD 5030.49R).**

8.14.4. DD1907**, Signature and Talley Record (DOD 4500.32R).**

8.14.5. CF 6059B**, US Customs Accompanied Baggage Declaration**.

8.14.6. CF 7507**, General Declaration (Outbound/Inbound) (AFI 24-401,402,403, and 404).**

8.14.7. I-94**, Immigration Form, Arrival/Departure Record (AFI 24-401,402,403,404).**

8.14.8. AF FORM 4069**, Tiedown Equipment Checklist**.

8.14.9. AMC Form 148**, Boarding Pass/Ticket/Receipt**.

8.14.10. AF FORM 4075**, Aircraft Load Data Worksheet**.

Chapter 9

TRAINING POLICY

9.1. Passengers on Training Missions.

9.1.1. Passengers are not authorized during initial qualification or re-qualification training.

9.1.2. Mission qualification training, evaluations, off station trainers, and JA/ATTs may carry passengers only if the aircrew in training is qualified (AF FORM 8 on file documenting successful completion of an aircraft checkride).

9.1.2.1. If passengers are onboard, touch-and-go landings, stop-and-go landings, NVG training, simulated emergency training, and airdrops are prohibited unless specifically tasked by JA/ATT authorization. (This does not apply to MEP.)

9.1.3. Multiple practice approaches will not be accomplished with 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 or stop and-go landings are performed providing the mission is a designated training flight and an IP or EP is in command.

9.2. Touch and Go Landing Limitations.

9.2.1. Touch-and-go landings will only be accomplished under the direct supervision of an IP or AC certified by unit commander to perform touch-and-go landings.

9.2.1.1. Ground idle touch-and-go landings may be performed by any pilot from either seat, when a flight examiner pilot, instructor pilot, or an instructor pilot candidate during upgrade training/evaluation occupies a pilot‘s seat.

9.2.2. Limitations.

9.2.2.1. Minimum runway length for 50% flap flight idle touch-and-go landings is 5000 feet. Minimum runway length for all other touch-and-go landings is 6000 feet.

9.2.2.2. Minimum ceiling/visibility: 300 ft and RVR 40 (3/4 SM visibility) with an IP, 600 ft ceiling and 2 miles visibility for touch-and-go certified ACs.

9.2.2.3. Authorized when crosswind component corrected for RCR is within the recommended zone of the landing crosswind chart.

9.2.2.4. Do not accomplish touch-and-go landings on slush covered runways.

9.2.2.5. Authorized when normal wake turbulence criterion is met.

9.2.2.6. Do not perform no-flap ground-idle touch-and-go landings.

9.2.3. Include type of touch-and-go as part of the briefing, (i.e., ground-idle or flight idle).

9.3. Training on Operational Missions.

9.3.1. 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:

9.3.1.1. Normal touch-and-go limitations apply and MEP are briefed of the activity.

9.3.1.2. All transition training will be accomplished during the first 12 hours of the FDP only.

9.3.1.3. Pre-mission coordination requirements. Activity shall be approved by TWCF/618 TACC tasking authority and unit training is charged to unit. As part of pre-mission planning, PICs 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, PICs 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 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.

9.3.1.4. 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. Simulated Emergency Flight Procedures.

9.4.1. Simulated emergency flight procedures will be conducted IAW AFI 11-202V3 and this instruction.

9.4.1.1. In an actual emergency, terminate all training and flight maneuvers practice.

9.4.2. Practice emergencies that require simulating an engine shutdown, placing switches in other than their normal position, or an abnormal configuration, only during training, evaluation, or currency flights when an instructor or flight examiner pilot is in one of the pilot seats. Preface all simulated emergencies with the word "simulated" and terminate simulated emergencies when an actual emergency arises. Do not conduct aircraft systems emergency procedures training during any tactical training. IP candidates who occupy a pilot seat and are under the supervision of a flight examiner pilot not in a pilot seat may practice simulated emergency procedures during initial or requalification upgrade evaluations to instructor pilot. This applies to all maneuvers in **Table 9.1** unless otherwise specified in the restrictions.

9.4.2.1. Simulated Engine Failure. Direct IP supervision required except for IP candidates under the supervision of flight examiner during initial or requalification upgrade evaluations to IP. One power lever may be retarded to FLIGHT IDLE at not less than VMCA (one-engine inoperative, out of ground effect) nor less than 300 feet AGL.

9.4.2.2. Weather. Simulated engine failure is authorized in daylight IMC if the weather is at or above circling minimums and at night with weather at or above 1000 foot ceiling and 2 SM visibility or circling minimums whichever is higher. Crosswind component must be within the recommended zone of the landing crosswind chart.

9.4.2.3. Restrictions:

9.4.2.3.1.□□□□□□ Engine out no-flap landings are restricted to AC candidates and above.

9.4.2.3.2.□□□□□□ Planned go-arounds from simulated engine-out no-flap approaches are not authorized.

9.4.2.3.3.□□□□□□ Required go-arounds from engine out no-flap approaches require setting the flaps to 50% and using all four engines.

9.4.2.3.4.□□□□□□ Do not compound engine out circling approaches with any other simulated malfunctions.

9.5. Not Used.

9.6. Night Vision Goggle Training. Crews will accomplish aircrew training according to AFI 11-2C-130JV1 and MAJCOM approved training guides before performing NVG operations.

9.6.1. Pilots who are both Touch-and-Go certified and NVG Airland Certified may perform NVG Touch-and-Go landings IAW paragraph **9.2** ***WARNING:*** Crews must be thoroughly familiar with the visual and/or aural cues required to identify the amount of runway remaining when performing Touch-and-Go operations.

9.7. Prohibited In-Flight Maneuvers. The following maneuvers will not be practiced or demonstrated inflight:

9.7.1. Full stalls.

9.7.2. Rudder Force Reversals.

9.7.3. Spins.

9.7.4. Simulated runaway trim malfunctions.

9.7.5. Simulated hydraulic system loss by turning engine driven hydraulic pumps off.

9.7.6. Simulated two-engine approaches or landings.

9.7.7. Simulated engine-out takeoffs.

9.8. Instructor Pilot Briefing. Before all training/evaluation missions, aircraft commanders or instructors/flight examiners should brief their crew on the following additional items:

9.8.1. Training/Evaluation requirements. Instructors/evaluators (for each crew position) will outline requirements and objectives for each student or examinee. Brief the training objectives IAW AMC C-130 Aircrew Training System syllabus.

9.8.2. Planned training area and seat changes.

9.9. Debriefing. Review and evaluate overall training performed. Each student or aircrew member should understand thoroughly what training has been accomplished. Ensure all training is documented. Each student or aircrew member should thoroughly understand lessons learned.

9.10. Simulated Instrument Flight. Do not use a hood or other artificial vision restricting device for any phase of flight. Simulated instrument flight may be flown and logged without use of a vision restricting device.

9.11. Flight Maneuvers. The maneuvers listed are authorized for qualification and continuation training. They are applicable to all C-130J aircraft except when prohibited or restricted by the flight manual or other current directives. The pilot or IP will alert all crew members prior to accomplishing the following:

9.11.1. Approach to Stalls: Direct IP supervision required. Authorized during day VMC at a minimum of 5000 feet above the ground or cloud deck.

9.11.2. Instrument Steep Turns: Authorized during daylight VMC with up to 60 degrees bank. Restricted to above 5000 ft AGL (or 5000 feet above a cloud deck) for bank angles in excess of 45 degrees.

9.11.3. Slow Flight: Direct IP supervision required. Authorized at, or above 5000 feet AGL. Fly at approach, threshold, and 1.2 X power off stall speed with gear down and flaps 0%, 50%, or 100%. Do not exceed 15 degrees of bank.

9.12. Operating Limitations.

9.12.1. Unless specifically authorized elsewhere, do not practice emergency procedures that degrade aircraft performance or flight control capabilities.

9.12.1.1. In an actual emergency, terminate all training and flight maneuvers practice.

9.12.2. Low/Missed Approaches. Initiate a planned missed approach no lower than:

9.12.2.1. Precision approach - DH (or 200-feet HAT, whichever is higher for practice emergency involving a simulated engine shutdown).

9.12.2.2. Non-precision approach - Minimum altitude depicted on approach plate.

9.12.2.3. Visual Approach - 200 feet AGL for simulated emergencies (no minimum for non-emergency).

9.12.2.4. Restricted Low Approach (aircraft, equipment, or personnel are on the runway) - 500 feet AGL.

9.13. Landing Limitations.

9.13.1. No-Flap Approach Limitations:

9.13.1.1. Direct IP supervision required.

9.13.1.2. Do not combine no-flap circling approaches with any other simulated emergencies.

9.13.1.3. Maximum gross weight is 120,000 lbs.

9.13.1.4. Authorized in daylight IMC if the weather is at or above circling minimums and at night with weather at or above 1000 foot ceiling and 2 SM visibility or circling minimums whichever is higher.

9.13.1.5. Use 50% flaps for a go-around. ***NOTE:*** Check no-flap landing distance with runway available.

9.13.2. No-Flap Landing Limitations:

9.13.2.1. Authorized in short-body aircraft only.

9.13.2.2. Crosswind component must be within the recommended range on the crosswind chart.

9.13.3. Stop-and-Go Landing Criteria:

9.13.3.1. Authorized only on designated training, evaluation, or currency missions.

9.13.3.2. Authorized to be performed by any C-130J qualified pilot.

9.13.3.3. Runway remaining for takeoff must be sufficient to allow rotation and refusal speeds to be equal.

9.13.3.4. Crosswind component corrected for RCR must be in the recommended zone of the landing crosswind chart.

9.13.3.5. Ceiling and visibility must be at least 300 feet and 3/4 mile (RVR 40).

9.13.4. Do not perform Stop-and-Go landings:

9.13.4.1. In conjunction with no-flap landings.

9.13.4.2. When normal wake turbulence criterion is not met.

9.13.4.3. When intercepting or crossing the flight path of a wide-bodied aircraft while performing an approach or landing.

9.14. Actual Engine Shutdown and Airstart. Direct IP supervision required. One engine may be shutdown at not lower than 2500 feet AGL in daylight VMC.

9.15. Aborted Normal Takeoff. Direct IP supervision required. Authorized during formal upgrade training in daylight. Crosswind component must be within the recommended zone of the takeoff crosswind chart. Runway must be dry, hard-surfaced, and long enough to allow refusal and takeoff speeds to be equal. Initiate the abort by stating "REJECT" before refusal speed. Do not practice aborts from touch-and-go or stop-and-go landings. Prebrief all actual engine shutdowns due to a simulated malfunction. Requires OG/CC approval.

9.16. Aborted Maximum Effort Takeoff. Direct IP supervision required. Authorized for AC upgrades and above during formal upgrade training. Restricted to the main runway during daylight. Crosswind component must be within the recommended zone of the takeoff crosswind chart. Runway must be dry, hard-surfaced and long enough to allow refusal and takeoff speeds to be equal. Simulate a runway length less than CFL. Initiate the abort by stating "REJECT" at or below a refusal speed based on simulated runway length. Compare distance traveled to runway length and point out the ramifications of operating with less than critical field length. Subsequent aborted takeoffs can lead to excessive brake heating. Brakes must be allowed to cool between aborted takeoffs. Do not shut down an engine due to simulated malfunctions. Do not practice aborted max effort takeoffs from stop-and-go landings. Requires OG/CC approval.

9.17. Maintenance Opportune Training.

9.17.1. All aircraft in the en route system on AMC missions are available for opportune training except those designated non-available in the advisory section of GDSS Form 59 by the 618 TACC (i.e. SAAM, 1A1, Phoenix Banner, and Medevac missions). Mission planners will annotate the GDSS Form 59 for those missions not allowed to be used for opportune training. The en route maintenance production supervisor will brief the aircraft commander of the intention to train, either at the aircraft or at the air mobility command center, prior to entering crew rest. If a conflict arises between the crew and en route maintenance teams it should be routed through 618 TACC duty officer/operations director for resolution. ***NOTE***: PIC approval is not required.

9.17.2. Training will not be performed on aircraft carrying hot cargo or on CLOSE WATCH missions. All training will be complete and the aircraft ready for flight not later than 2 hours

prior to crew show. Crews are not required to remain with the aircraft while training is performed.

9.17.3. Use of ANG/ARC aircraft will be supported on a pre-coordinated basis. The en route unit POC will coordinate with the owning ANG/ARC wing command post to obtain permission to utilize the ANG/ARC aircraft for training purposes.

Table 9.1. Training Restriction Summary.

Simulated Engine Failure	Prohibited during tactical operations. Retard one throttle to flight idle at not less than VMCA (one-engine inoperative, out of ground effect) nor less than 300 feet AGL. Authorized day IMC if WX at or above circling minimums or night if weather is at or above 1000 foot ceiling and 2 SM visibility or circling minimums, whichever is higher. Crosswind component must be in the recommended zone. Engine out no flap landings are restricted to MPD pilots and above, and planned go-arounds are not authorized. Engine out circling approaches will not be compounded with any other simulated malfunctions.
No-Flap Landing (Short-body aircraft only)	Prohibited during tactical operations. No-flap circling approaches are authorized for MPD pilots and above, and will not be combined with any other simulated emergencies. Max gross weight is 120,000 lbs. and crosswind component must be within the recommended range. Authorized day IMC if WX at or above circling minimums or night if weather is at or above 1000 foot ceiling and 2 SM visibility or circling minimums, whichever is higher.
Touch-and-Go Landings	Requires flight eval and certification. ACs restricted to flight idle touch and go landings. Ground-idle performed by any pilot from any seat when a flight evaluator, IP, or IP candidate during upgrade/evaluation occupies a pilot‘s seat. No-flap ground-idle touch and go landings not authorized. Minimum runway length: flaps 50 percent, 5000 feet - for all other, 6000 feet. Crosswind component corrected for RCR is within recommended zone. Minimum ceiling of 600 ft and minimum visibility of 2 SM (300 ft and RVR 40 (3/4 SM visibility) if an IP is in either seat)

Stop-and -Go Landings	Authorized only on designated training, evaluation, or currency missions. Runway remaining for takeoff must be sufficient to allow rotation and refusal speeds to be equal. Crosswind component corrected for RCR must be in the recommended zone of the landing crosswind chart. Ceiling and visibility must be at least 300 feet and 3/4 mile (RVR 40).
Go-around, Missed Approaches	Minimum altitude is 500 feet AGL when aircraft, equipment, or personnel are on the runway. VFR - No lower than 200 feet AGL when practicing simulated emergencies. Practice instrument approaches - no lower than minimum altitude for the approach.
Slow Flight	At or above 5000 feet AGL. Fly at approach, threshold, and 1.2 times stall speed with gear down and flaps 0, 50, or 100 percent. Do not exceed 15 degrees of bank.
Approach to Stalls	Requires day VMC at a minimum of 5000 feet AGL or 5000 feet above cloud deck.
Instrument Steep Turns (N/A for Tactical maneuvers)	Authorized during day VMC with up to 60 degrees bank. Restricted to at or above 5000 feet AGL or 5000 feet above a cloud deck for bank angles in excess of 45 degrees. Review stall speeds before performing turns.

Chapter 10

AIRCREW OPERATIONS IN CHEMICAL, BIOLOGICAL, RADIOLOGICAL, NUCLEAR, AND HIGH-YIELD EXPLOSIVE THREAT ENVIRONMENT

10.1. Overview. The proliferation of Chemical, Biological, Radiological, Nuclear, and High-Yield Explosive (CBRNE) weapons and the means to deliver them present serious security threats to the global operations of air mobility forces. AFTTP 3-3.C-130J describes the CBRNE threat, passive defense measures to mitigate that threat, and guidance for ground and flight operations in a contaminated environment.

Chapter 11

NAVIGATION PROCEDURES

11.1. General.

11.1.1. Definitions and Terminology.

11.1.1.1. Category I (CAT I) Route. Any route that does not meet the requirements of a CAT II route, including tactical navigation and overwater routes.

11.1.1.2. Category II (CAT 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) or intersection of at least two radio aid radials (VOR, TACAN) or one radial (VOR, TACAN) and one DME at least once each hour.

11.1.1.3. Controlling Navigation Solution. The controlling EGI (INAV) navigation solution the mission computer is using for en route navigation. The SHIP SOLN, selected via the NAV SELECT page of the AMU, determines which will be used to steer the aircraft either manually or with the autopilot.

11.1.1.4. First Suitable Airfield (FSAF) and Last Suitable Airfield (LSAF). Utilized in the equal time point (ETP) calculation. These are represented as the ―First Nearest‖ and the ―Last Nearest‖ airports in the ETP calculation in the PROGRESS pages of the CNI. They are airports closest to the coast out and coast in waypoints that meet applicable criteria for C-130J operations. Forecast weather for the FSAF and LSAF must meet destination weather minimum filing requirements.

11.1.1.5. Equal Time Point (ETP). Geographic point along the route from which the flight time to the FSAF or the LSAF is equal.

11.1.1.6. Required Navigation Performance (RNP). RNP accuracy standards require an aircraft to remain within a specific number of nautical miles of its cleared course centerline for 95% of the duration of the flight. The associated track containment limit is twice the RNP value and represents the maximum limit of protected airspace. Airspace where RNP is applied is considered special qualification airspace. Both the operator and the specific aircraft type must be approved for operations in these areas. RNP airspace is being incorporated around the world to increase air traffic capacity by decreasing separation requirements between routes. Refer to FLIP Area Planning publications/charts to determine RNP airspace.

11.1.1.7. Minimum Navigation Performance Specifications (MNPS) Airspace. MNPS airspace exists in both the North Atlantic Region (NAT) and certain Canadian portions of the North American Region. Refer to FLIP Area Planning publications/charts to determine MNPS airspace. The C-130J must comply with all MNPS equipment requirements when flying within the lateral dimensions of this airspace. Aircraft meeting the North Atlantic MNPS requirements also meet the Canadian MNPS requirements. Aircraft entering MNPS airspace are required to have two Long Range Navigation Systems (LRNS) capable of staying within 12.6 NM of cleared track for 95 percent of the flight. Gross navigation errors are those that exceed 24 NM from track center line. Prior to entering MNPS airspace, both INSs must be fully operational to meet the MNPS

requirement of having two fully serviceable LRNSs. In order to signify that a flight is approved to operate in NAT MNPS airspace, the letter ―X‖ will be inserted within item 10 of the DD1801 flight plan form.

11.1.1.8. NAT Tracks. Contained within the North Atlantic MNPS airspace is an organized track system (NAT Tracks) between FL 285 and FL 420 to optimize air traffic flow between the North American and European continents. NAT tracks are designed based on meteorological data and are updated twice daily. When flying over the North Atlantic, crews should obtain a copy of the North Atlantic Tracks (NAT tracks) valid for their coast out time from the DOD NOTAM internet site.

11.1.1.9. Reduced Vertical Separation Minimum (RVSM) Airspace. This airspace requires special certification and exists to increase airspace capacity, safely, by reducing vertical separation from 2000‘ to 1000‘ between suitably equipped aircraft. RVSM has been implemented in the CONUS, Europe, Africa, and Middle East. RVSM airspace typically extends from FL 290 through FL 410. Consult AP/1 and AP/2 for locations and lateral and vertical dimensions of this airspace.

11.2. Mission Planning Procedures.

11.2.1. Refer to Chapter 6 for general mission planning requirements.

11.2.2. Mission/Route Planning. Pilots will normally accomplish and verify mission planning while in a flight planning facility/base operations; the data is then loaded manually (or via the data transfer card) into the CNI. Pilots will also calculate and verify the required ramp fuel load.

11.2.2.1. When practical, pilots will plan the most direct routing possible or utilize wind optimized CFP routing to enhance fuel conservation.

11.2.2.2. Computer Flight Plan (CFP). Optimized routing with applied forecast winds can be obtained from ACFP (USAF) or OPARS (USN). ACFP 4.0 can produce a .rte file that PFPS 3.3.1 can recognize and open. Use initial ATC cruise ceiling for the en route altitude. Update actual flight level winds using the N-PFPS WX utility if necessary.

11.2.2.3. Verify the CFP for route definition and accuracy, paying particular attention to adherence with over flight clearances. Pass any flight plan discrepancies to 618 TACC/ACFP (DSN 576-1241/1243, 618-256-1241/43) or Fleet Numerical Meteorology and Oceanography Center/OPARS (DSN 878-4302/4325, 831-656-4302/4325).

11.2.2.4. Refer to **Chapter 14** to accomplish fuel planning.

11.2.3. Equal Time Point (ETP) Computations.

11.2.3.1. The ETP provides crews a tool for recovery airfield decision-making when in-flight emergencies occur. ETP computations are required on CAT I routes when the total time between the LSAF and FSAF is 5 hours or more. ETPs must be annotated and plotted on the MPC and MFP prior to the coast-out waypoint. Computer programs which use similar algorithms as the manual computation may be used. Enter ETP information into the CNI PROGRESS page during preflight. CNI-computed ETPs only become accurate upon reaching the PERF CRUISE altitude. CNI-computed ETPs can be obtained for different airspeeds (i.e. 260 KTAS for a 3-engine scenario).

11.2.3.2. The blocks provided on top of the C130J PFPS CFP should be used to record information needed by the CNI to compute an ETP. These blocks and provided formulas also serve as a worksheet for crews to do the manual ETP computation. The ACFP flight plan has information on the bottom of the flight plan for manual ETP calculations. (See Fig 14.2 for sample CFP.) If using the computer programs or the CNI, annotate applicable information on the Master Flight Plan (MFP). If the CNI is used, annotate ―CNI‖ in the master flight plan blocks for which the CNI does not present a number.

11.2.3.3. To compute a manual ETP:

11.2.3.3.1. Identify and record the LSAF, coast-out point, approximate midpoint of the CAT I portion, coast-in point, and FSAF. The coast-out point, approximate midpoint, and coast-in point are actual waypoints on the flight plan. The coast-out point for ETP purposes must occur after initial level-off.

11.2.3.3.2. Determine and record the distance from the LSAF to the FSAF (entering the two airfields and approximate midpoint into PFPS is an easy way to do this).

11.2.3.3.3. Determine and record the average groundspeed (GS) for the first-half (coast-out to midpoint) and second-half (midpoint to coast-in) of the CAT I portion. Divide the respective en-route distance by the en-route time to/from the midpoint to determine accurate average GS.

11.2.3.3.4. Calculate a wind factor (WF1 & WF2) for each half by subtracting the flight-planned average TAS from the averaged GS. If a tailwind is experienced the WF will be positive. If a headwind is experienced the WF will be negative.

11.2.3.3.5. Use the provided formulas to compute the time it takes to fly from the ETP to the FSAF. Use this time and the second-half-averaged GS to calculate a distance from the FSAF that the ETP occurs. ***NOTE*:** The ETP will always occur upwind of the geographic midpoint.

$$\text{TIME in hours (ETP-FSAF)} = \frac{\text{DISTANCE (LSAF-FSAF)}}{(\text{WF2} - \text{WF1}) + 2\text{TAS}}$$

$$\text{DISTANCE (ETP-FSAF)} = \text{TIME (ETP-FSAF)} * \text{GS } (2^{nd} \text{ half})$$

11.2.3.3.6. The INDEX FROM/TO and PROGRESS pages may also be utilized in flight to update times and distances to diversion bases along the route of flight. An accurate GS must be entered in order to obtain correct ETE calculations.

11.3. Master Flight Plan and Master Plotting Chart.

11.3.1. One CFP and one plotting chart will be used as master copies for each flight utilizing CAT I procedures. Both will be labeled ―MASTER COPY‖ and will be referred to as Master Flight Plan (MFP) and Master Plotting Chart (MPC). Both documents must be retained by the unit for a period of 90 days following the mission.

11.3.2. MFP Usage. The MFP is normally maintained by the PM but should be kept readily available to both pilots. It will be used to record the following in flight:

11.3.2.1. All ATC clearances and changes to clearances.

11.3.2.2. The wind, temperature, altitude, fuels remaining, and the bearing/range between the INAV solutions over waypoints bordering and within CAT I Navigation airspace.

11.3.2.3. Any loss or degraded navigation/avionics equipment.

11.3.2.4. Compass deviation checks.

11.3.2.5. Oceanic Navigation Accuracy Check.

11.3.3. MFP Symbology. Use the following symbology to ensure that both pilots can easily determine which waypoints have been programmed into the CNI-MU, which programmed waypoints have been verified, and which waypoints have been transitioned in flight. See Figure 14.2 for an example MFP.

11.3.3.1. Place a check-mark next to the waypoint to signify the waypoint has been entered into the CNI-MU and the course and distance have been verified.

11.3.3.2. Circle the check-mark to signify the coordinates, course and distance in the CNI-MU have been verified by another crewmember.

11.3.3.3. Draw one diagonal line through the circled check-mark to signify the waypoint has been passed, reported, and all applicable annotations associated with waypoint passage have been completed.

11.3.3.4. Cross the first diagonal line with another to signify that the aircraft‘s position has been plotted on the MPC approximately 60 nm (10 to 15 minutes depending on groundspeed) after waypoint passage.

11.3.4. MPC Usage. The use of a plotting chart is required on every route requiring CAT I Navigation. Use an appropriate JNC, GNC, or an Oceanic Planning Chart (OPC). During mission planning, draw the course line representing the planned route of flight on the MPC and highlight the associated suitable emergency airfields. The PIC will verify this information and annotate the chart with his/her signature, date, and mission number/call sign. During flight, 10 to 15 minutes (depending on groundspeed) after each CAT I waypoint, the PM will Mark Position and then plot the INS-only position on the MPC (using a dot surrounded by a triangle) and annotate the marked time and position coordinates adjacent to the plot. The PM should compare the plotted point to the course line. This procedure confirms that the navigation system is steering the airplane to the correct waypoint.

11.4. Pre-Flight Procedures.

11.4.1. Pre-flight procedures must include a UTC time check and resynchronization of the aircraft master clock, if necessary. Aircraft clock errors resulting in position report time errors can lead to an erosion of actual longitudinal separation between aircraft. Acceptable time standards that can be used include GPS (corrected to UTC), Naval Observatory Master Clock (DSN 762-1401/1069 or 560-6742), and WWV (2500, 5000, 10,000, 15,000, 20,000 kHz).

11.4.2. Pre-Flight Communications Check. A pre-flight check of the SATCOM (if equipped) and HF radios should be made to a suitable agency (operating authority, command post or ATC). At least one HF radio must be confirmed operational prior to coast out or the mission must be terminated.

11.4.3. Navigation Initialization and Solutions. Both the AUTONAV and manual GC alignment of the INSs result in the required navigation performance needed for RNP RNAV operation. The GPS positions may be used as initial positions as long as they agree within one-tenth of one minute. If GPS is not available, use precision parking coordinates or, as a last resort, obtain coordinates from an airfield diagram published in an approved instrument approach book. This position must be checked and verified by both pilots and recorded on the MFP.

11.4.4. Communication/Navigation/Identification Management System (CNI-MS). In addition to Chapter 6 requirements, when configuring for CAT I operations, both pilots will verify that the INAV Position Alert 1 is set to 4.0 miles and INAV Position Alert 2 is set to 8.0 miles on the CNI PROGRESS page. This will generate an INAV POS DIFFERENCE Advisory at 4.0 miles and an INAV POS MISCOMPARE Caution at 8.0 miles.

11.4.5. Loading the Route of Flight. Because CAT I routes usually involve the manual input of waypoints not found in the database, and often require aircraft maximum range capability, it is critical that both pilots work in sequence and independently to enter accurate route-of-flight data. It is not sufficient for one crewmember to simply observe another crewmember entering the data. The following steps will be completed by the pilots:

11.4.5.1. One of the pilots will:

11.4.5.1.1. Load the route of flight directly from the filed flight plan, MFP or data transfer card into the CNI and verify both the magnetic course and the leg distance for each waypoint with the MFP. Loading the route directly from the filed flight plan may minimize pilot/controller clearance loop (misinterpretation) errors. Label waypoints so they can be readily identified for subsequent position reporting. If the courses differ by more than 2° or the distances differ by more than 2 NM, the pilot will resolve the discrepancy prior to flight. Completion of this step will be annotated with a check-mark next to the waypoint.

11.4.5.1.2. Using the LEGS pages, insert the forecast winds (if available) at each waypoint.

11.4.5.1.3. Verify the total distance to the destination on the CNI PROGRESS page. Any significant disparity (more than 25 NM to allow for SIDs/STARs and approaches) in the total distance between the CNI and MFP will require a recheck of the ramp position and waypoint coordinates.

11.4.5.2. The other pilot will verify the waypoint coordinates and course and distance information from the opposite side CNI to the MFP. Completion of this step will be annotated with the check-mark being circled on the MFP.

11.4.5.3. If the planned route of flight is a stored route or one loaded during a data transfer, verification of waypoint coordinates must still be accomplished by both pilots in the same manner.

11.5. CAT I Navigation Procedures.

11.5.1. This section provides general procedures and guidance for the operation of navigation systems on CAT I routes. For navigation system requirements, consider all

oceanic airspace as MNPS airspace. Specific procedures for RNP RNAV airspace are addressed in subsequent sections.

11.5.2. Refer to Chapter 4 for the navigation Minimum Equipment List (MEL) for CAT I and RNP RNAV operations.

11.5.3. Navigation System Accuracy Checks.

11.5.3.1. Ground. After leaving the ramp, perform the INS/INAV groundspeed check by stopping the aircraft and checking each pilot‘s groundspeed on the CNI-MUs or HDDs/HUDs. Groundspeeds in excess of 1 knot while the aircraft is stationary may indicate a faulty INS.

11.5.3.2. Airborne. Determine INAV position accuracy by comparing it to en route NAVAIDs.

11.5.3.3. Compass Deviation Check. Perform a compass deviation check using both INSs and the standby compass prior to entering CAT I airspace. Perform subsequent checks after heading changes of 30° (or greater) or every 3 hours. Record the deviation in the appropriate block of the MFP. Apply this correction to headings to be flown whenever it is necessary to use the standby compass as the sole source for navigation.

11.5.3.4. Oceanic Navigation Accuracy Check. Prior to coast-out, evaluate/compare the accuracy of all navigation solutions. In the event of discrepancies, greater than 4 NM, the crew should investigate the cause and determine if CAT I flight is feasible. Record this gross error check in the appropriate block of the MFP. If a pure INS position is determined to be more than 4 miles in error, an in-flight alignment (IFA) may be accomplished provided sufficient time is available prior to entering RNP RNAV or oceanic airspace. If coast-out is made at a radial/DME fix, the appropriate radial should be selected on the non-active CDI as a further check that the navigation system is tracking to the fix.

11.5.4. Communications. In addition to guidance in **Chapter 6**, crews will accomplish the following:

11.5.4.1. Emergency Frequency Monitoring. In the interest of safety during oceanic and remote area operations (100 NM offshore), flights should maintain a listening watch on 121.5 and 243.0 MHz and the VHF common frequency.

11.5.4.2. BIU Backup. Ensure that one of the pilots place their transmission switch to an HF radio so that the crew can transmit on HF in case of BIU Backup. The other pilot should select VHF 2 for the same reason. VHF 1 will be available on the Get Home Control and crew can attempt to relay transmissions to other aircraft on 121.5 until within VHF range of ATC.

11.5.5. Oceanic Clearance: If not received before take-off, the oceanic clearance should be obtained prior to the boundary of oceanic airspace IAW FLIP.

11.5.5.1. The PIC will designate the duties of flying the aircraft and copying/monitoring clearances so that they are clearly understood by all crewmembers. The PM will normally receive and record the oceanic clearance. Both pilots will monitor and crosscheck to ensure that it has been copied correctly and clearly understood.

11.5.5.2. The clearance will be recorded on the MFP, and reviewed by both pilots. If the oceanic clearance received is different from the planned clearance, use the following procedures:

11.5.5.2.1. Record the new route on the MFP to include applicable updates to ETP data.

11.5.5.2.2. Enter the new waypoints into the CNI in accordance with the pre-flight procedures in this chapter.

11.5.5.2.3. Ensure fuel will still be sufficient to arrive at the destination waypoint with required reserves.

11.5.5.2.4. Mark out the old plotted track and draw the revised plot on the MPC.

11.5.5.2.5. In no case should this process simultaneously engage the attention of both pilots during flight.

11.5.6. Approaching Coast-out. Prior to coast-out and outside of RNP RNAV airspace it is permissible and recommended to use the EGI or GPS (INAV source in AUTO mode) as the INAV solution for both CNI-SPs if NAVAIDs are available for monitoring. Prior to losing NAVAID reception, the INAV solution that is not the controlling solution must be placed to INS. This ensures there is constant comparison of the controlling solution to an independent INS solution. Beginning at the coast-out waypoint and continuing through coast-in, CNI-MU bearing/range between INAV solutions should be recorded at each waypoint to provide a running record of INS drift relative to the controlling solution.

11.5.7. IFF. Reset Mode 3A code to 2000, 30 minutes after entering Category I airspace.

11.5.8. MFP and MPC Procedures.

11.5.8.1. After takeoff, record the takeoff time in the Actual Time of Arrival (ATA) block of the departure airfield on the MFP. As soon as practical after takeoff, determine a revised Estimated Time of Arrival (ETA) for each line of the MFP using flight-planned leg times and the actual departure time.

11.5.8.2. Prior to waypoint transition, check the MFP magnetic course and distance to the next waypoint against the CNI-MU. The courses should be within 2º and the distances should agree within approximately 2 NM. Check and verify that the subsequent waypoint is properly programmed. Update ETAs to the next two waypoints.

11.5.8.3. Overhead the waypoint, confirm the ATA and determine the minutes ahead/behind by comparing it to the ETA. Record the CNI-MU bearing/range between INAV solutions to provide a running record of INS drift relative to the controlling solution. Record the actual fuel remaining above the flight-planned continuation fuel and write the difference between continuation fuel and actual fuel remaining in the EXCESS block of the MPF. See the in-flight fuel management section of **Chapter 14** for additional guidance and definitions.

11.5.8.4. Immediately after waypoint passage, and as soon as the aircraft has intercepted its new course, confirm that the aircraft is outbound on its flight planned magnetic course to the next waypoint and record the bearing/range between INAV solutions found on the INAV 1/3 page.

11.5.8.5. Record the actual in-flight conditions (altitude, wind, and static air temperature (SAT)) above the forecast conditions on the next line of the MFP. Update these conditions as well as fuel flow as needed on the PERF CRUISE and LEGS pages in the CNI-MU.

11.5.8.6. If required, complete a position report to the controlling agency in accordance with FIH procedures. The layout of the CNI PROGRESS page supports the format of the position report; however, ensure that ETAs passed to the controlling agency match the ETAs on the MFP. This will enable the pilots to determine if an ETA has changed from what was previously reported. If an ETA changes by more than 3 minutes, notify the controlling agency. If on a 618 TACC integrated flight management (IFM) mission, include the verbiage ―pass to HILDA‖ in your initial position report.

11.5.8.7. Draw a diagonal line through the waypoint on the MFP to indicate it has been passed, reported, and all applicable annotations associated with waypoint passage have been completed.

11.5.8.8. Approximately 60 nm (10 to 15 minutes depending on groundspeed) after waypoint passage, MARK the aircraft position and plot the INS-only position on the MPC. Record the mark time and position coordinates next to the plot. If the plotted position is not within 2 NM of the course center-line, check waypoint coordinates for accuracy, ensure the autopilot is tracking correctly in NAV mode, re-check the accuracy of the charted course-line, and re-check that the position was plotted correctly.

11.5.8.9. Cross the first diagonal on the MFP to indicate that the aircraft position has been plotted.

11.5.8.10. When the frequency of waypoints along CAT I route segments is greater than one every thirty minutes, full-line entries and plotting can be limited to a minimum of one every hour. Full-line entries with the corresponding position plot are required for every waypoint involving a change of heading over 20 degrees.

11.5.9. Routine Monitoring

11.5.9.1. Because of the possibility of the autopilot disconnecting from the altitude/steering modes, regular checks of correct engagement with the navigation system should be made.

11.5.9.2. Crews should monitor aircraft performance and outside parameters, suspect potential problem areas, and review the performance manual if the following conditions are encountered:

11.5.9.2.1.□□□□□□ The fuel remaining is less that the planned

continuation fuel. 11.5.9.2.2. Any Low Calculated Fuel CNI-MU

advisory.

11.5.9.2.3. ATA at any MFP fix is off by more than ± 5 minutes.

11.5.9.2.4. SAT differs by more than ± 5ºC from flight planned.

11.5.9.2.5.□□□□□□ Actual winds differ by more than 30º or 15 knots from flight-planned.

11.5.9.2.6.□□□□□□ Any Ahead/Behind Time more than 10% of total planned en route time to that point.

11.5.9.2.7. Hazardous meteorological conditions.

11.5.10. Approaching Landfall. Use the radar to help identify the coast-in position. When the aircraft is approaching the first landfall NAVAID, tune and identify the navigation facility and crosscheck the aircraft position. If coast-in is made at a radial/DME fix, the appropriate radial should be selected on the non-active CDI as a further check that the navigation system is tracking according to the current clearance. Once NAVAID reception is assured and flight is not being conducted in RNP RNAV airspace, all INAV solutions can be returned to AUTO. If entering BRNAV airspace, AUTOTUNE the NAVAIDS, select INS/RAD as the controlling solution, and place the other INAV solution in AUTO. Revert to CAT II procedures. Reset POS ALERT and IFF Mode 3 as appropriate.

11.6. Special Certification Airspace Requirements and Procedures.

11.6.1. The GPS currently installed in the C-130J navigation suite does not meet FAA certification requirements for IFR navigation. AFI 11-202V3 allows the GPS to be used as a mission enhancement system for en route instrument navigation, if it is used to update a self-contained navigation system, such as INS or mission computer, and is checked against other approved sources (in this case an RNP-10 certified INS). Therefore, on CAT II routes (not including operations in BRNAV airspace), the EGI or GPS can be used as the controlling solution for en route instrument navigation if NAVAIDs are available for monitoring. The NAVAIDs must be operational and actively monitored. If deviations are observed, crews should revert to navigation via ground based NAVAIDs. For operations over CAT I routes (not including operations in RNP-10 airspace), the EGI or GPS can be used as the controlling solution providing the pilot can monitor its performance using the offside INS as an independent navigation source. The EGI or GPS cannot be used as the controlling solution in BRNAV or RNP-10 airspace, even when using INS as the sole input source for the EGI.

11.6.2. The C-130J is certified for RNP-10 and Basic RNAV (BRNAV)/RNP-5 airspace, but with operational time restrictions. These certifications are based on raw INS data.

11.6.2.1. RNP-10 airspace requires a track keeping accuracy of 10 NM for 95 % of the flight. The track containment limit is 20 NM. The C-130J navigation system has been certified to meet the requirements of RNP-10 airspace for up to 10 hours from the time the controlling INS was commanded to the NAV mode. The pure INS solution is the only certified navigation solution for flying in this airspace. Annotate the letter ―R‖ in Block 10 of the DD Form 1801 or appropriate block of the ICAO flight plan to indicate RNP-10 certification.

11.6.2.2. BRNAV/RNP-5 airspace requires a track keeping accuracy of 5 NM for 95 percent of the flight. The track containment limit is 10 NM. Minimum equipment to operate in this airspace is one INS capable of updates. The INS/RAD or INS-only solution will be the controlling INAV solution in this airspace. The INS/RAD solution can be used without time restrictions if the solution is being updated from NAVAIDs. If the NAVAIDs become unreliable, either through radio failure or denial, the INS-only solution will still maintain BRNAV accuracy for 2.6 hours from the time the controlling INS was commanded to the NAV mode. If needed, an in-flight alignment may be used to restart the time-in-NAV of an INS prior to entry into this airspace. INS/RAD or INS-only solution will be selected prior to entering BRNAV airspace. The AUTOTUNE function of the CNI-MS must be enabled. BRNAV airspace currently exists throughout the

European Region. Because BRNAV airspace exists only where NAVAID reception is available, CAT I procedures are not required. Annotate the letter ―R‖ in Block 10 of the DD Form 1801 or appropriate block of the ICAO flight plan to indicate BRNAV certification.

11.6.3. Reduced Vertical Separation Minimum (RVSM) Airspace. Airspace where RVSM is applied is considered special qualification airspace. Both the operator and the specific aircraft type must be approved for operations in these areas. Pilots will refer to FLIP AP/2 and the following for RVSM requirements:

11.6.3.1. Both primary altimeters, at least one autopilot, the altitude advisory system, and the transponder, must be fully operational. The AC will request a new clearance to avoid this airspace should any of this equipment fail.

11.6.3.2. Have the autopilot engaged during level cruise, except when circumstances such as the need to re-trim the aircraft or turbulence require disengagement.

11.6.3.3. Crosscheck the altimeters before or immediately upon coast out. Record readings of both altimeters.

11.6.3.4. Continuously crosscheck the primary altimeters to ensure they agree ± 200 feet.

11.6.3.5. Limit climb and descent rates to 1,000 feet per minute when operating near other aircraft to reduce potential TCAS advisories.

11.6.3.6. Immediately notify ATC if any of the required equipment fails after entry into RVSM airspace and coordinate a plan of action.

11.6.3.7. Document in the aircraft forms malfunctions or failures of RVSM required equipment.

11.7. Navigation Malfunctions and Failures.

11.7.1. Should INAV solutions noticeably separate and exceed 8 NM, determine and use the INS solution considered most accurate by evaluating both INSs using available radio aids, ground mapping radar, and GPS. Highest validity should be given to positions referenced via radar. Next highest validity should be given to positions derived via radio aid fixing. When left to determine most probable position (MPP) via navigation solution comparisons, two agreeing INS positions are more valid than two agreeing GPSs; and two agreeing GPSs and one agreeing INS indicate a probable INS problem. Consider INS-radar/NAVAID, INS-INS, and INS-GPS position comparisons that are less than 4 NM difference to be valid and in agreement. Once the most accurate INS is determined, select it as the controlling solution. Update ETAs to ATC if required.

11.7.2. Situations may arise when crews cannot identify the faulty navigation system by simple comparison of positions between navigation solutions. Fly the aircraft halfway between the disagreeing INS solutions. Plot both CNI-SP solutions at least once every 30 minutes on the MPC, labeling the pilot CNI-SP navigation solution MPP1 and the co-pilot‘s MPP2. Continue to evaluate outputs from each INS and try to use plotted position information to identify adverse trends.

11.7.3. Malfunctions and failures in MNPS airspace:

11.7.3.1. Crews experiencing deterioration or failure of navigation equipment that reduces the capability to comply with MNPS prior to MNPS entry will return to a suitable airfield with a maintenance repair facility.

11.7.3.2. Crews experiencing deterioration or failure of navigation equipment after entry into MNPS airspace should immediately report the malfunction to the controlling agency and subsequent agencies throughout the route of flight. Once the aircraft has entered oceanic airspace, the PIC should continue to operate the aircraft in accordance with the Oceanic Clearance already received, appreciating that the reliability of the total navigation system has been significantly reduced. The PIC should also prepare a proposal to ATC with respect to the prevailing circumstances and consult with ATC as to the most suitable action.

11.7.3.3. If an aircraft in MNPS airspace is unable to continue flight in accordance with its ATC clearance for reasons such as severe turbulence, aircraft performance problems, or pressurization failure, a revised clearance should be obtained as soon as possible. If unable to obtain a new clearance, offset 30 NM from the assigned route by turning 90 degrees from track and maintain altitude if possible. Once offset 30 NM, climb or descend to an altitude which differs from those normally used by 500 ft.

11.7.4. Malfunctions and failures in RNP-10 or BRNAV airspace:

11.7.4.1. Aircraft unable to maintain RNP-10 or BRNAV RNAV tolerances must advise controlling agency immediately and take appropriate coordinated action.

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. Aircrew 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 normally 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. Other crew members are not authorized to clear a Red X. ***EXCEPTION:*** The PIC may clear Red Xs for engine covers, pitot covers, intake/exhaust inspections, and gear pins when qualified maintenance personnel are not available, unless prohibited by the home station MXG/CC or OG/CC.

12.4. Aircraft Servicing. Aircrew**s** are normally not required to service the aircraft; however, they are qualified and authorized to perform those aircrew maintenance support tasks found in this volume. The aircrew performs these tasks only in the absence of qualified maintenance personnel and is designed for support of the aircraft and its mission while away from home station. Without exception, the applicable checklists will be used during all refueling and de-fueling operations.

12.4.1. Aircraft Refueling. Aircrew members qualified in ground refueling may perform refueling duties. Aircrews will only refuel in cases when maintenance support is not readily available and the mission would be delayed.

12.4.1.1. Crew members acting as refueling supervisors and panel operators will comply with T.O. 00-25-172 and refueling job guides.

12.4.2. Concurrent Ground Operations. The PIC and chief servicing supervisor (CSS) shall ensure aircrew members and servicing personnel accomplish concurrent servicing (CS) in accordance with T.O. 00-25-172 and servicing technical orders. Aircrews performing Dash-1 preflight inspections or cargo loading concurrent with servicing must have cooperation and close coordination with the CSS. The CSS will remain in continuous intercom contact with fuel servicing team members during the entire servicing operation. When the aircrew is at the aircraft, the PIC is responsible for all aspects of aircraft operations and shall inform the CSS how aircrew members will participate in passenger evacuation/safety. In keeping with the guidelines in T.O. 00-25-172, CSS has authority over all phases of CS operations to include personnel participating in the refuel.

12.4.2.1. Use the following guidelines when CS operations are conducted with passengers on board:

12.4.2.1.1. A current and qualified crew member will be designated the passenger compartment monitor (PCM) and shall continuously monitor passengers during CS. PCMs will not perform other duties during servicing.

12.4.2.1.2.□□□□□□ The AC shall designate a current and qualified crew member to remain on the flight deck to monitor interphone and be prepared to broadcast a request for emergency assistance on a radio tuned to the appropriate agency with ready access to an emergency response team. The PA may be used to direct passenger evacuation in an emergency.

12.4.2.1.3.□□□□□□ The PCM shall brief passengers on emergency egress, exits, prohibitions, and hazards. Passengers will remain seated but will not wear seat belts during CS. Passengers shall turn off all portable electronic devices, except medically required devices, prior to servicing.

12.4.2.1.4.□□□□□□ Passengers shall not board/exit the aircraft

during servicing. 12.4.2.1.5. Passengers are not required to ground

themselves.

12.4.2.1.6.□□□□□□ Passenger representatives will assist the PCM when passengers board and exit. Passengers must remain outside the vapor hazard area, the fuel servicing safety zone, oxygen servicing area, and 25 feet from fuel vents during servicing.

12.4.2.1.7.□□□□□□ The AC, or designated aircrew representative, or CSS will advise PCMs when to evacuate passengers.

12.4.2.1.8.□□□□□□ Unless environmental conditions dictate, the crew entrance door and left paratroop door should remain open and the right paratroop door should remain closed and locked during concurrent servicing. The PCM may lower, but not lock, the left paratroop door during inclement weather.

12.4.2.1.9.□□□□□□ The PCM shall set the interior lighting as bright as possible to suit the combat environment.

12.4.2.1.10.□□□□□□ The loadmaster shall ensure cargo loading or unloading does not jeopardize passenger safety. Winching is prohibited. Do not load/unload cargo containing explosives, oxygen, flammable gases or liquids during CS.

12.4.2.2. Simultaneous fuel and oxygen servicing is not authorized.

12.4.2.3. Winching of rolling stock and non-spark producing (i.e. wooden) pallets is authorized. Driving vehicles equipped with spark arresters is authorized during fuel servicing. When loading vehicles without spark arresters, the vehicles must be either completely inside the cargo compartment, or outside of the established fuel servicing safety zone, before fuel servicing lines can be pressurized. ***EXCEPTION:*** Diesel and turbo-charged (without waste gates) gasoline-powered vehicles can be on-loaded or off-loaded without having to stop fuel flow.

12.4.3. Hot Refueling. Hot refueling (refueling with aircraft engines running) will only be conducted by crews that have been authorized and certified according to AFI 11-235, *Forward Area Refueling/Rearming Point (FARRP) Operations*.

Chapter 13

CARGO AND PASSENGER HANDLING PROCEDURES

13.1. General. The loadmaster coordinates loading or offloading with air terminal operations or shipping agencies; plans loads; and supervises loading or offloading operations. Performs preflight and postflight of aircraft and systems, and computes aircraft weight and balance. Provides for safety and comfort of passengers and troops, and security of cargo, mail, and baggage during flight. Prepares and rigs equipment for airdrop, and participates in the aerial delivery of equipment, supplies, and personnel.

13.1.1. Multiple Loadmaster CRM. Although the C-130J was designed to a one loadmaster requirement, situations will arise when more than one will be on board the aircraft. To ensure good CRM, the primary loadmaster will assume overall responsibility for completion of all checklists and ensure no confusion exists about what duties have been or need to be accomplished.

13.2. Responsibilities of Aircraft Loading.

13.2.1. AMC Stations.

13.2.1.1. Air freight personnel are responsible for selecting cargo and mail for airlift, promptly completing documentation, palletizing cargo, load planning, computing load distribution, and moving cargo to and from the aircraft to meet scheduled departure. They will advise the loadmaster of destination, size, weight, and type of cargo (classified, hazardous, etc.) before starting loading operations to permit proper positioning. They will also coordinate traffic activities affecting loading and offloading and assign sufficient air freight loading personnel for cargo handling. Air freight personnel are responsible for safe positioning of material handling equipment and cargo to or from the aircraft cargo door, ramp, or auxiliary ground loading ramps. Under supervision of the loadmaster, air freight personnel prepare the aircraft for loading, stow loading/tiedown equipment if the aircraft is not to be reloaded, physically load the aircraft and tie down cargo and equipment, and release tie-down and physically offload cargo.

13.2.1.2. The loadmaster is responsible for aircraft preflight, load planning, certifying load plans, operating aircraft equipment, supervising and directing loading and offloading operations, and cargo tie down. He or she is also responsible for entering weight and balance data into the CNI-MU Weight and Balance pages, and transferring that information onto the DD Form 365-4 Form-F. This can either be accomplished manually, or electronically using the AFF program and a printer. The loadmaster coordinates with the loading crew supervisor to verify cargo against manifests, supervises loading operations, and is responsible for safe movement of cargo into and out of the aircraft. The loadmaster will notify the PIC, command post, or terminal operations officer if loading personnel are injured or cargo, aircraft equipment, or aircraft structure is damaged during loading or offloading. The loadmaster will brief the PIC on any hazardous cargo and cargo jettison ability prior to engine start.

13.2.1.3. Loads planned by qualified load planners will be accepted by the aircraft loadmaster 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 and MAJCOM publications. If cargo is refused or rearranged for these reasons, forward all applicable information, including a copy of the load plan, to MAJCOM standardization and evaluation through standardization channels. AMC personnel attach an AMC Form 54. ***EXCEPTION:*** The aircraft loadmaster may deviate from load plans to facilitate ease of onload or offload of cargo and to alleviate unnecessary aircraft reconfiguration without submitting documentation. The aircraft loadmaster 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 loadmaster is the on-scene expert for load planning and accepting cargo for airlift. Some loads are not specifically detailed in applicable directives and require the loadmaster to use his or her best judgment, based on training, experience, and knowledge, to determine the best and safest method of loading the cargo. When difficulties arise, they should seek advice of other personnel (i.e., available loadmasters and squadron, group, wing, NAF, or MAJCOM standardization personnel).

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 material handling equipment for loading or offloading. Loadmaster‘s responsibilities and authority are the same as described in paragraphs **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 loadmaster can accept DD Form 2133, **Joint Airlift Inspection Record**, 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 TO 1C-130J-9CL-1. The DD Form 2133 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. Safety aisles will be according to AFI 11-2C-130JV3, Addenda A and this chapter.

13.3.1. When passengers are seated in side facing seats, the loadmaster will ensure there is sufficient space between the cargo and the seats to permit passenger leg room. ***NOTE***: All passenger hand-carried items must be of a size to fit under the seat and must not obstruct the safety aisle. Any items that do not fit under a seat or obstruct an aisleway will be stowed with checked baggage and secured for flight.

13.3.2. At least one unobstructed emergency exit is available for each 20 passengers/troops. (This does not restrict overwater flights if the three overhead escape hatches are available for egress.) Litters and seats erected across an emergency exit are not considered an obstruction.

13.3.3. Passengers/ambulatory patients may not be seated closer than 30 inches in front of palletized netted cargo or cargo secured with straps. When the cargo, either palletized or non-palletized, is secured with chains, the 30-inch spacing is not required. ***EXCEPTION:*** Maintain 30 inch spacing on AE missions, when carrying occupied litters.

13.4. Pre-mission Duties.

13.4.1. Cargo Missions.

13.4.1.1. Aircraft loadmasters in coordination with aerial port personnel establish loading times. Loading times that differ from the normal pre-departure sequence will be established, with PIC coordination, before the loadmaster 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 loadmaster checks in with the air terminal operation center (ATOC) or other designated location to obtain load breakdown and assist in load planning as required.

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 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. Use only authorized cargo straps as directed by MAJCOMs.

13.4.2. Passenger Missions. Maximize seat availability on all missions. It may be necessary for crews to perform passenger service functions at stations that do not have this capability. These functions include manifesting, anti-hijacking processing, and ensuring visa/passport requirements are met. Do not hesitate to contact 618 TACC/XOGX, Aerial Port Control Center; 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 AOC/AMD for specific details. File a copy of the passenger manifest with the most responsible on-scene agency if there is no base operations, or other agency responsible for filing the manifest.

13.4.2.1. Manifesting. Passenger service or base operations personnel manifest passengers at locations with an AMC passenger processing activity.

13.4.2.1.1. The PIC and loadmaster are responsible to ensure all passengers are properly manifested.

13.4.2.1.2. At locations without an AMC passenger processing activity, aircrew will manifest all passengers using DD Form 2131, **Passenger Manifest**, and leave a copy of the manifest 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.

13.4.2.1.3. When the aircrew accomplishes manifesting, anti-hijack-processing will also be completed by the aircrew IAW AFI 13-207, *Preventing and Resisting Aircraft Piracy (Hijacking)*.

13.4.2.2. 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 loadmaster of meal accountability.

13.4.2.3. Complimentary snacks and beverages are authorized on Transportation Working Capital Fund (TWCF) funded missions (including ANG and AFRC flown

missions) for passenger consumption only. See AMCI 24-101 Volume 14, Military Airlift Passenger Service, Section F, for those flight missions that are authorized to receive complimentary snacks and beverages. 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 to be placed onboard, the loadmaster 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.

13.4.2.4. Ensure the auxiliary power unit is shut down before boarding passengers unless adequate ear protection is provided. A passenger service representative or crew member will assist passengers at the bottom of the steps, and the loadmaster will assist in seating passengers. Ensure that only adult, English-speaking passengers are seated next to emergency exits. Do not seat mothers with infants, children under 15 years old or physically challenged persons in seats adjacent to emergency exits. Make every effort to seat families together.

13.4.2.5. When children under the age of two are accepted as passengers, their sponsor has the option to either hold the child or place him or her 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 will provide 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 has banned the use of booster seats, harnesses, and vest child restraints.

13.4.2.5.1. Passengers may hand-carry their 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.

13.4.2.5.2. If the mission aircraft is equipped with aft facing "airline style‖ seats, secure the seat 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.

13.4.2.6. 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 tanker airlift control elements or deploying unit commanders to decide if downloading of baggage is necessary.

13.5. Passenger Handling.

13.5.1. The loadmaster 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, 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 loadmaster 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.

13.5.3. In-flight Procedures.

13.5.3.1. 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. Encourage passengers to remain seated with their seat belts fastened. Due to concern for their safety, passengers are not allowed to lounge or sleep on cargo or baggage.

13.5.3.2. Make frequent checks on the following:

13.5.3.2.1. Cabin temperature.

13.5.3.2.2. Passengers with small children.

13.5.3.2.3. Cleanliness of the cabin and lavatories.

13.5.3.3. Do not allow passengers to tamper with emergency equipment. Passengers will not be permitted access to checked baggage.

13.5.3.4. On long flights, particularly during hours of darkness, use all possible means to make passengers comfortable. Dim and extinguish unnecessary compartment lights.

13.5.3.5. Passengers may visit the flight deck only when approved by the PIC. Use good judgment when requesting this authority.

13.5.4. Meal Service. ***WARNING:*** Under no circumstances will the Flameless Ration Heaters (FRH), included in MREs, be handled inside the aircraft. If activated, the FRH will become extremely hot and may cause personal injury.

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 meal preparation.

13.5.4.2. Passengers having a boarding pass, AMC Form 148, **Boarding/Pass Ticket**, showing a meal was ordered are served 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.□□□□□□ After takeoff, distribute box lunches to passengers who boarded at the previous station. This lessens confusion when flight segments are short and passengers board at subsequent stations.

13.5.4.3.2.□□□□□□ Ensure each passenger receives the meal ordered by verifying the passenger's AMC Form 148, **Boarding/Pass Ticket**.

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, number of spoiled meals (by menu), issuing organization, and in the case of frozen meals, the manufacturing agency, and manufacturer's lot number.

13.5.4.6. When prepared meals have not been furnished to passengers, the loadmaster will 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.

13.6. Over-Packed Meal Procedures: Not Used.

13.7. Enroute and Post Flight Duties.

13.7.1. At stations where a crew change is made and loading or offloading is required, the inbound loadmaster is responsible for offloading the aircraft. The outbound loadmaster is responsible for planning and loading the outbound load. When no crew change occurs, the inbound loadmaster is responsible for onloading or offloading cargo.

13.7.2. At crew stage points, 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.).

13.7.3. Assist passengers to deplane. If BLUE BARKS, DVs, COIN ASSIST, or couriers are aboard, the loadmaster 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 loadmaster prior to directing personnel to load any weapons. This applies to airborne assaults and airland missions.

13.8.2. 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. Accomplish weight and balance for this airplane according to T.O. 1-1B-50, *Weight and Balance*, TO 1C-130(C)J-5-1/TO 1C-130J-5-1, *Sample Basic Weight Check List*, TO 1C-130(C)J-5-2/TO 1C-130J-5-2 *Loading Data Manual*, and AFI 11-2C-130JV3, Addenda A, *C-130J Configuration/Mission Planning.* 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 (preferably metal), stenciled "Weight and Balance" with the airplane model and complete serial number on the cover or spine.

13.9.1. The supplemental handbook will include TO 1C-130(C)J-5-1/TO 1C-130J-5-1, TO 1C-130(C)J-5-2/TO 1C-130J-5-2, and AFI 11-2C-130JV3, Addenda A, sufficient copies of DD Form 365-4, **Weight and Balance Clearance Form F – Transport/Tactical**, to complete the mission and a certified copy of the current DD Form 365-3, **Chart C-Basic Weight and Balance Record**. The Chart C will include the airplane's basic weight, basic moment, and center of gravity.

13.9.2. The weight and balance section of the unit possessing the airplane will maintain the required documents.

13.9.3. Loadmasters, in units who authorize the use of Canned Forms F, will still compute an accurate operating weight in the CNI-MU.

13.10. Cargo Validation Onloading and Offloading Procedures and Format. To assist in the cargo validation process, a cargo validation onloading and offloading format is provided in this chapter. After completion, send through standardization channels to MAJCOM A3V. MAJCOM A3V will forward these comments to HQ AMC/A3V. Use the following format when tasked to validate a new loading procedure or when encountering any cargo you feel requires special or specific onloading, offloading or tiedown procedures not currently listed in TO 1C-130J-9.

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, i.e., dump truck, medical van, etc.

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.

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 loadmasters required to onload or offload cargo and their position to observe clearances, if required.

13.10.3. Equipment and Material Requirements. Special equipment and material required to onload and offload cargo, i.e., cargo winch, prime mover, shoring requirements.

13.10.4. Aircraft Configuration Required.

13.10.5. Preparation of Cargo for Loading. Components that must be removed or reconfigured to onload and offload cargo, i.e., helicopter struts, exhaust stacks, cabs, etc.

13.10.6. Loading Procedures.

13.10.7. Location of Tiedown Points.

13.10.8. Offloading Procedures.

13.10.9. Comments.

Chapter 14

FUEL PLANNING

14.1. General. This chapter is designed to assist planners and pilots in fuel planning airland and airdrop missions, with or without low-level segments. A fuel plan is required for all flights except local area training flights with established standard fuel loads. The CFPS Computer Flight Plan (CFP) and TOs 1C-130J-1-1 and 1C-130(C)J-1-1 Performance Manuals are the primary preflight references. All preflight planning must be verified with aircraft mission computer (MC) performance prior to departure. The planning procedures in this chapter apply to AMC, ANG, AFRC, PACAF, and USAFE units on AMC-tasked and 618 TACC-flight managed missions in addition to local missions flown by AMC units. Missions should be planned at altitudes, routes, and airspeeds to minimize fuel usage.

14.2. Definitions. The following definitions apply to fuel planning, and take precedence over similar definitions published elsewhere.

14.2.1. CAT 1 route: Any route that does not meet the requirements of a CAT II route, including tactical navigation and overwater routes. This is designated on the ACFP by the ampersand symbol (&).

14.2.2. Contingency fuel: An identified extra to compensate for unforeseen circumstances during any phase of flight (i.e. unforecasted weather, launch delay, etc)

14.2.3. Required ramp fuel load (RRFL): Minimum fuel required at engine start to complete tasked mission.

14.2.4. Depressurization fuel: Additional fuel required to protect the aircraft and occupants in the event of a cabin depressurization followed by an extended diversion to an alternate airport at low altitude where fuel consumption is increased.

14.2.5. Tankered fuel: Additional fuel carried through a primary destination for use on a subsequent leg.

14.2.6. Wing Relieving Fuel: Additional fuel kept in the main tanks intended to counter wing bending moments and keep the aircraft within flight manual weight limitations.

14.3. Alternate Selection. Plan fuel to an alternate only when AFI 11-202V3 or AFI 11-2C-130JV3 require the filing of an alternate.

14.3.1. When only one alternate is required, use the closest suitable airfield meeting mission requirements (such as special requirements for hazmat or patients) and 11-202V3 weather criteria.

14.3.2. If two alternates are required, use the two closest suitable airfields meeting 11-202V3 weather criteria and fuel plan to the more distant of the two.

14.3.3. When selecting an alternate, suitable military airfields are preferred if within 75 nautical miles of destination. (The ACFP default distance to an alternate is 75 nautical miles. Consequently, where the alternate is less than 75 nautical miles from the primary destination, ACFP will assume that the airfield is 75 nautical miles away.)

14.3.4. ACFP will provide a route of flight to the primary alternate if greater than 75 miles from the destination.

14.4. Fuel Planning Profiles. En route cruise airspeed normally should be planned at a constant TAS IAW the performance manual. Missions planned using Long Range Cruise (LRC) provide little flexibility in the air when faced with actual fuel critical situations requiring the conservation of additional fuel. Divert profiles should be fully fuel planned and represent what will actually be flown. Altitudes should be no higher than the ATC cruise ceiling per the performance manual.

14.4.1. CFPS CFP Planning Profile. The C-130J performance module of PFPS is certified to calculate accurate fuel planning information. Crews should use the C130JHI.frm form when printing the CFP so both the route of flight and fuel planning information can be recorded. Use the fuel planning blocks on the top of the flight plan and **Table 14.1** for fuel planning. En Route and Minimum Landing Fuel will be automatically printed. Pilots will ensure an accurate Recovery Fuel is input on the CFPS Premission/Configuration/Fuel screen so calculated Continuation Fuels used during in-flight fuel monitoring are valid. When alternates are required, pilots may need to accomplish and print two iterations of the flight plan to incorporate an accurate Recovery Fuel. For example: After the first calculation, pilots will extract the en route fuel to the alternate from the last line of the flight plan and add this to the initial Recovery Fuel. A second flight plan will be calculated once the Premission/Configuration/Fuel screen is updated with the correct Recovery Fuel. If an alternate is required, use the Turnpoint/Additional Points screen to insert the designated airfield as a DVT (divert) type after the intended landing airfield. See Figure 14.2 for a sample of a completed CFPS CFP and Figure 14.3 for a sample of a completed fuel planning worksheet.

14.4.2. Aircrew will receive an Advanced Computer Flight Plan (ACFP) when on an Integrated Flight Management (IFM) mission from C2. ACFP will produce a .rte file that PFPS can recognize and open. The flight plan can be opened in PFPS, and an accurate fuel plan can be obtained. This will also allow the C130JHI form to be printed if desired, and a mission card can be cut from this flight plan. The PFPS flight plan may be easier for aircrews to log required entries when in CAT I airspace.

14.4.3. Manual USAF Form 70 Profile. In the event pilots must rely on a manually-calculated USAF Form 70 (or equivalent), the C-130J Fuel Planning Worksheet found on Figure 14.1 should be used for fuel planning. En route fuel is manually calculated by adding the required components supplied as standard or derived from charts or tabulated data in the applicable Performance Manual. *Fuel To Climb* charts are used to manually calculate climb fuel. *Range Summary* or *Specific Range* charts are used to manually calculate cruise fuel from Top-of-Climb (TOC) to overhead destination using an average gross weight. Continuation Fuel for each leg will be calculated using the following formula:

Continuation Fuel = Fuel Remaining (beginning of leg) – Landing Fuel + Recovery Fuel

14.4.4. C-130J Mission Computer Profile. The C-130J Mission Computer plans a complete climb, cruise, descent, approach and landing profile based on the inserted LEGS DATA and PERF CLIMB, CRUISE, and DESCENT factors. Accurate leg fuels, as calculated by the MC, are dependent on pilots ensuring that airspeed, altitude, winds, temperature, and fuel flow are correctly represented for each leg of the route and updated/corrected as in-flight

conditions change. Because the flight profile is more than a planning tool, pilots must use good judgment when inputting forecast/planned information versus actual performance and conditions. During preflight and at each waypoint, the Fuel On Board (FOB) for remaining legs will be compared against the flight planned Continuation Fuel to ensure there is sufficient fuel to continue the mission as planned in order to meet or exceed destination fuel requirements. Once airborne, the FOB on the PERF INIT WEIGHT page is calculated (not sensed) using sensed Fuel Flow versus Time. Update the FOB on the PERF INIT WEIGHT page to the amount indicated by the totalizer only when the totalizer amount is less than the calculated FOB. Use the most conservative of the FOB or totalizer readings when recording fuel remaining during in-flight fuel monitoring. The CNI will provide a FUEL QTY ERROR advisory when the PERF INIT WEIGHT FOB and totalizer readings differ by more than 2500 lbs for more than 10 minutes. Reserve Fuel (FIXED on PERF INIT WEIGHT) should be set to the Recovery Fuel value. The CNI supplies a Low Calculated Fuel advisory when the calculated EXTRA fuel on the PERF INIT WEIGHT page falls below zero. Destination and Alternate Landing Fuel can be obtained from the MC. Flight crews will use the MC to evaluate and verify destination landing fuel status after mission changes and reroutes and whenever a divert is required and/or extensive weather avoidance routing is required.

14.5. Fuel Planning Procedures. Aircrew and mission planners will manage aviation fuel as a limited commodity and precious resource. Fuel optimization will be considered throughout all phases of mission planning and execution. Excessive ramp and recovery fuel adds to aircraft gross weight and increases fuel consumption. Do not ferry extra fuel beyond optimum requirements for safe mission accomplishment and training objectives. Aircrew and mission planners will optimize flight plans and flight routing for fuel efficiency. In-flight procedures such as climb/descent profiles and power settings should also be considered for efficient fuel usage. Aircrew should employ the following aviation fuel optimization measures without compromising flight safety or jeopardizing mission/training accomplishment::

14.5.1. Plan a 45-minute fuel reserve at destination or alternate (when an alternate is required).

14.5.2. For remote destinations, holding is authorized in lieu of an alternate airport. In such situations, use 2+00 hrs reserve fuel (1+15 holding in lieu of an alternate and 0+45 reserve).

14.5.3. For all missions, calculate an additional 30 minutes of contingency fuel. Contingency fuel should not be considered reserve fuel since crews may burn some or all of their contingency fuel. Contingency fuel will be included in the initial required ramp fuel load (RRFL).

14.5.4. AMC‘s ACFP will calculate reserves and contingency fuel as holding fuel. Computer flight plans will have 1+15 holding when combining 0+45 reserve and 0+30 contingency fuel (for remote destinations ACFP will plan 2+00 holding plus 30 minutes contingency).

14.5.5. Reserve and contingency fuel will be computed using consumption rates providing maximum endurance at 10,000 feet MSL. When computing reserve and contingency fuel for remote destinations, use consumption rates providing maximum endurance at 20,000 feet MSL.

14.5.6. Calculate CAT 1 fuel reserve as 10% of flight time fuel over the CAT 1 route/route segment, not to exceed 1+00 fuel at normal cruise.

14.5.7. Thunderstorm forecasts will be based on the DD form 175-1 or equivalent. Where weather forecast conditions dictate, add the following fuel corrections:

14.5.7.1. 1,000 lbs if the route of flight has known or forecast icing conditions.

14.5.7.2. 1,500 lbs if forecast thunderstorms are scattered or numerous along the route of flight.

14.5.8. Minimum landing fuel is 3,000 lbs. This fuel accounts for gauge errors. Do not include this 3,000 lbs of fuel in the 45-minute fuel reserve and 30 minute contingency fuel calculations.

14.5.9. Routes will be planned at 320 KTAS (260 KTAS below 10,000 MSL), except for oceanic crossings. For oceanic crossings, routes will be planned at 300 KTAS or 290 KTAS, optimized for gross weight.

14.5.10. Using all available planning tools (including ACFP) and guidance in this chapter, PICs will determine the RRFL. When actual fuel load exceeds the RRFL by more than 2,200 lbs, defuel the aircraft to the RRFL.

14.5.11. Tankering fuel for convenience is prohibited. 618 TACC-sanctioned tankered fuel is deemed operationally necessary, and will be included in the RRFL. When there is a conflict between an on-time departure and defueling, the 618 TACC deputy director of operations (DDO) will determine which takes precedence The OG/CC will make this determination when serving as execution authority for the mission.

14.5.12. Wing Relieving Fuel

14.5.12.1. Calculate Wing Relieving Fuel using the flight manual weight limitations chart for the aircraft‘s planned cargo load. Enter the chart with the aircraft empty weight and cargo weight, then read across to determine the fuel required to remain within limits. Add enough Wing Relieving Fuel, if required, to ensure that Recovery Fuel does not fall below the fuel required to remain within limits.

14.5.12.2. All local and JA/ATT missions flying low-level will initially takeoff with main tanks full to reduce the effects of wing upbending and increase the center wingbox service life. Decreased takeoff fuel in the main tanks can decrease the center wingbox service life as much as 47 percent.

14.5.13. Optimize fuel loads. Mission plan for the required ramp and recovery fuel. Ensure ramp fuel is correct upon arrival at aircraft.

14.5.14. 4. Minimize use of APUs. Use ground power units when practical

14.5.15. Delay engine start time. Units should establish and implement local engines start time standards.

14.5.16. Minimize aircraft weight through optimized fuel loads and reduction of equipment not necessary to accomplish the mission.

14.5.17. Establish C2 and flight following procedures to ensure timely notification of mission changes/cancellations to avoid unnecessary or unproductive flight time.

14.6. Depressurization Fuel. During all flight portions crews are to consider the possibility of exercising depressurization procedures**.**

14.6.1. Crews are to calculate the fuel required to reach a recovery airfield in the event of depressurization at the ETP. Plan to arrive at the recovery airfield with 0+30 minutes reserve fuel at optimal cruise speed for the depressurization transit altitude. Transit should be planned at 10,000 feet MSL. Plan on burning all other fuel.

14.6.2. Prior to flight, crews must compare the calculated depressurization fuel with the RRFL to determine if additional fuel is required.

14.7. In-flight Fuel Management. For a flight plan and corresponding fuel log to be most meaningful for in-flight fuel monitoring, the actual cruise altitude should be no lower than 2000 feet below planned altitude and the airspeed no lower than planned airspeed –10 KTAS or higher than planned airspeed + 10 KTAS. If initial cruise conditions do not fall within these parameters, the PIC should strive to reach (or beat) them as soon as possible.

14.7.1. Fuel consumption will be monitored by comparing the FOB to predicted Fuel Remaining and the required Continuation Fuel on the flight plan. At a minimum, consumption comparisons will be accomplished and recorded on the Master Flight Plan (MFP):

14.7.1.1. As soon as practical after initial level off.

14.7.1.2. At convenient waypoint intervals not to exceed 1 hour.

14.7.1.3. At convenient waypoint intervals not to exceed 30 minutes if aircraft performance is critical or marginal (actual fuel is less than Continuation Fuel, icing conditions, weather avoidance, etc.).

14.7.1.4. Any time re-routing occurs or a lower altitude than what was flight-planned is required to be flown.

14.7.2. The fuel recording portion of the master flight plan may be discontinued at the discretion of the PIC when ALL of the following conditions have been met:

14.7.2.1. The Equal Time Point (ETP) has been crossed (CAT I routes).

14.7.2.2. Fuel systems and quantity indicators are functioning normally.

14.7.2.3. There is obvious extra fuel and the +EXCESS fuel trend is favorable.

14.7.3. On CAT I routes, prior to the ETP, if the EXCESS fuel becomes negative the PIC will consider and accomplish one of the following recommended actions:

14.7.3.1. Change the flight profile to ensure planned performance is reacquired and Fuel Reserves at destination will be met or exceeded.

14.7.3.2. Continue and land short of the intended destination (i.e., First Suitable Airfield (FSAF)) or proceed to intended destination based on an updated weather forecast that no longer requires an alternate.

14.7.3.3. Return to the departure base or the Last Suitable Airfield (LSAF).

14.7.4. Flight Plan Changes and Diversion. When mission requirements or ATC dictate a change to the planned mission or route, the fuel must be recalculated to ensure safe

completion of the flight. It is not practical to complete a new flight plan fuel log so the MC is the primary method of deciding if a mission change or reroute can be accommodated.

14.7.4.1. For an unplanned or directed en route divert, the FROM/TO page, with an associated cruise ground speed, can be used to determine an Estimated Time En Route (ETE). Using a 4000 lbs/hr fuel burn, crews should be able to decide if the new routing is achievable without adverse effects on destination fuel. Do not accept a reroute that adversely depletes the destination Reserve Fuel as prescribed in this chapter.

14.7.4.2. If the en route change does not affect the intended destination, then in-flight fuel monitoring will consist of comparing the MC predicted Remaining Fuel with Flight Plan Continuation Fuel at the next point common to the reroute and the original flight plan. After any route alteration, crews should actively monitor fuel state by recording the Fuel Remaining values at abeam positions of the original flight plan and using the ―Abeam‖ function of the INDEX/FIX INFO PAGE to crosscheck fuel status.

14.7.5. Declare ―Emergency Fuel‖ when it is determined that the aircraft will land with less than 3000 lbs. Declare ―Minimum Fuel‖ to ATC when it is determined that the aircraft will land with less than 3000 lbs plus the Required Reserve.

Table 14.1. Fuel Load Components.

FUEL PLANNING	
EN ROUTE	Fuel required from engine start through landing at the intended destination. Components include engine start/taxi/take-off (STTO), climb, cruise, approach fuel. En route fuel will be obtained from the CFPS CFP, or Performance Manual.
STTO	A component of en route fuel. Fuel required for engine start, taxi, and takeoff. Normally 800 lbs. For known taxi delays or additional engine-running ground time in excess of 30 minutes, add 30 lbs/min.
CLIMB	A component of en route fuel. Fuel required from takeoff through climb to initial cruise altitude. If a manual calculation is required, the applicable Performance Manuals‘ Fuel to Climb charts will be used. Unless required for mission accomplishment, plan to climb no higher than ATC cruise ceiling per the Performance Manual.
CRUISE	A component of en route fuel. Fuel required from TOC to overhead intended destination. If a manual calculation is required, the applicable Performance Manuals‘ charts will be used.
APPR	A component of en route fuel. Fuel required for approach, and landing from overhead destination. Normally 700 lbs, which accounts for one instrument approach of no longer than 10 minutes. For longer approaches, follow-on visual, and/or radar pattern work, compute fuel burn at 85 lbs/min.
CAT I RESERVE	Fuel for 10% of en route time along a CAT I route/segment computed at cruise fuel flow, not to exceed 1 hour of flight time.

ALTERNATE	Fuel required from intended destination to alternate, or most distant alternate when two are required. Flown at optimum cruise altitude, using direct routing to the alternate at LRC airspeed. Fuel for a missed approach (2000 lbs) and second approach at the alternate airfield is required when the visibility-only weather criteria is used to determine the suitability of the original destination.
REQUIRED RESERVE	45 minute reserve, using maximum endurance airspeed at 10,000 ft MSL (20,000 ft remote fields). Required overhead destination or alternate (if alternate is needed).
CONTINGENCY FUEL	30 minutes, using max endurance airspeed at 10,000 ft MSL (20,000 ft MSL for remote fields).
DEPRESSURIZATION FUEL	Fuel from the ETP to a recovery airfield, with 30 minute reserve. Calculated at LRC airspeed and 10,000 ft MSL. Plan on burning all other fuel. Compare with RRFL to see if additional fuel is required before flight.
MINIMUM LANDING FUEL	3000 lbs (Required). If it is determined that the aircraft will land with less than this amount, a fuel emergency exists and ATC must be informed. This entry is separate from required reserve and contingency fuel.
RECOVERY FUEL	The minimum planned landing fuel at intended destination. This is the sum of the Minimum Landing Fuel, Required Reserve, Wing Relieving Fuel (if required) and Alternate Fuel (if required). This fuel is critical calculating accurate Continuation Fuels for each leg; it must be updated in the Premission Configuration screen of PFPS if using a CFPS CFP.
CONTINUATION FUEL	Fuel required at the beginning of each leg to be able to proceed to the intended destination and land with the required Recovery Fuel.
TANKERED FUEL	Fuel for succeeding legs without refueling.
UNIDENTIFIED EXTRA	The difference between RRFL and actual ramp fuel. This figure should not exceed 2,200 lbs of RRFL.
WING RELIEVING FUEL	Additional fuel kept in the main tanks intended to counter wing bending moments and keep the aircraft within flight manual weight limitations.
WEATHER AVOIDANCE	1,500 lbs if forecast thunderstorms are scattered or numerous along the route of flight.
ICING	1,000 lbs if the route of flight has known or forecast icing conditions
KNOWN HOLDING DELAYS	Fuel for anticipated/planned holding, including remote destinations. Compute at Four-Engine Maximum Endurance Fuel Flow.

Figure 14.1. C-130J Fuel Planning Worksheet.

Instructions: Manual Flight Plan begin at Step 1. CFP begin at Step 5 and insert Enroute fuel.

Ramp Gross Weight	
Initial Cruise Altitude	
Temperature Deviation	

1	Min Landing (3000 lbs)	
2	Required Reserve (0+45)	
3	Alternate (see Table 14.1) -or- Holding In Lieu Of (remote dest, 1+15)	
4	Wing Relieving Fuel (if required)	
5	Recovery Fuel (1+2+3+4)	
6	Contingency (0+30)	
7	Tankered Fuel (only if req for next sortie)	
8	Approach (only if not incl in enroute fuel)	
9	Icing (1000 lbs if known/forecast)	
10	Thunderstorms (1500 lbs if SCT or NUM)	
11	Enroute (from CFP or block 11.5)	
12	Cat I Reserve (10% of Cat I fuel burn)	
13	Mission Fuel (5+6+7+8+9+10+11+12)	
14	Depressurization Fuel (from right column) Same as block H	
15	Required Ramp Fuel Load (RRFL, 13+14)	
16	Actual Ramp Fuel Load	
17	Unidentified Extra (16 minus 15, not more than 2200 lbs)	

Depressurization Fuel Planning

A	Min Landing (3000 lbs)	
B	Depressurization Reserve (0+30)	
C	Wing Relieving Fuel (if required)	
D	High Altitude Fuel Burn from takeoff to ETP	
E	Low Altitude Fuel Burn from ETP to FSAF, 10K' MSL, 260 KTAS	
F	Total Required (A+B+C+D+E)	
G	Normal Mission Fuel (from left column) Same as block 13	
H	Depressurization Fuel (F minus G) Zero if negative, move to block 14	

Manual Flight Plan Calculation for Enroute Fuel

11.1	STTO (norm 800 lbs)			
11.2	Climb			
11.3	Cruise (ETE*FF)	ETE	FF	
11.4	Approach (norm 700 lbs)			
11.5	Enroute Fuel (11.1+11.2+11.3+11.4)			

Figure 14.2. Sample Computer Flight Plan.

CFPS VERSION: 3.3.1 FOR THE C-130J-30 MASTER NAVAID FLIP: 9 APR 09 DATE S

MISSION DATE 15 APR 09	1. MIN LANDING	3000	3000	A. DEPRESS MIN LANDING	
CALL SIGN RCH5154	2. RESERVE (45 MIN)	3000	2000	B. RESERVE (30 MIN)	
PILOT IN CMD MILLER	3a. ALTERNATE (IF REQ) OR 3b. HILO (75 MIN IF REQ)	2000	—	C. WG RELIEVING (IF REQ)	
FROM: POPE AFB	4. WG RELIEVING (IF REQ)	—	14400	D. HI ALT BURN TO ETP	
TO: LAJES	5. RECOVERY FUEL (TOTAL OF 1-4)	8000	20400	E. LO ALT BURN ETP-FSAF (10K MSL, 260 KTAS)	
TOT DISTANCE 2477.7	6. CONTINGENCY (30 MIN)	2000	39800	F. DEPRESS FUEL REQUIRED (TOTAL OF A-E)	
TOT ETE 07+23	7. TANKERED (REQ'D ONLY)	—	40792	G. MISSION FUEL (FROM 13)	
TAKEOFF GROSS WT 140200	8. APPCH (IF NOT IN 11)	—	0	H. DIFFERENCE: E MINUS F (ZERO IF NEGATIVE, ENTER IN BLOCK 14)	
PARKING LOCATION GPS 1 N 3510.10 W 07901.58 GPS 2 N 3510.09 W 07901.58	9. ICING (1000 IF REQ)	—			
	10. TSTORM (1500 IF REQ)	—			
	11. ENROUTE (INCL STTO)	29192			
	12. CAT 1 RESERVE (10% OF CAT 1 TIME, 1 HR MAX)	1600			
	13. MISSION FUEL (TOTAL OF 5-12)	40792			
	14. DEPRESS (FROM H)	0			
	15. REQ RAMP FUEL LOAD (TOTAL OF 13-14)	40792			
	16. ACTUAL FUEL LOAD	42000			
	17. UNIDENTIFIED EXTRA (15 MINUS 16, DEFUEL IF >2200)	1308			

COMPASS DEVIATION CHECKS

TIME	INS1	INS2	DEV	STBY
1525	080	080	-3	083
1815	098	098	-2	100

ETP CALCULCATIONS T = TIME (IN
DIST1 = DISTANCE
DIST2 = DISTANCE
WF = GS - TAS

$$T = \frac{DIST1}{(WF2-WF1) + 2*TAS}$$

$$T = \frac{1002 + 1303}{(22-62) + 600} = \frac{2305}{560}$$

DIST2 = 4.12 × 322 =

ETP is 23.7 NM shor

(≈ N 3927

ETP INFORMATION

LSAF		KNGU	DIST	TIME			
COAST-OUT WAYPT		ZIBUT	154	Ø+21			
APPROX MID POINT	N3930 W055	LEG DIST	848	2+15	GS1	TAS	WF1
		FROM LSAF	1002	2+46	- 362	- 300	= +62
COAST-IN WAYPT		KOKER	984	2+50	<-- FROM MIDPOINT		
FSAF	LPLA	LEG DIST	319	1+13	GS2	TAS	WF2
		FRM MIDPT	1303	4+03	= 322	- 300	= +22

#	ROUTE FIX	BANK CHNL FREQ	LAT LONG	MC DRIFT MH	ZD TD TDR	ALT W/V SAT	IN FLIGHT WEATHER	IAS TAS GS	ZT TT TTR	ETA RETA ATA	MIN A/B	LEG FUEL REM FUEL F FLOW	ACTUAL CONT F EXCESS
	KPOB/A POPE AFB	30	N 35 10.25 W079 00.87	050 0 050	0.0 0.0 2477.7	217M 238/007 +20C			00+00 00:00 07+23	15:00	A/B	800 41200	41500 36392 +5108
	.level off		N 35 37.96 W077 29.95	078 0 078	79.3 79.3 2398.4	27000M 236/033 -33C		N/A N/A N/A	00+21 00:21 07+02	15:21	A/B	2221 38979 6272	34171

C-130J HIGH LEVEL FLIGHT PLAN

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Figure 14.3. C-130J Fuel Planning Worksheet Example.

Instructions: Manual Flight Plan begin at Step 1. CFP begin at Step 5 and insert En route fuel.

Ramp Gross Weight	142,000
Initial Cruise Altitude	27,000
Temperature Deviation	+4 C

1	Min Landing (3000 lbs)	3000
2	Required Reserve (0+45)	3000
3	Alternate (see Table 14.1) -or- Holding In Lieu Of (remote dest, 1+15)	2000
4	Wing Relieving Fuel (if required)	0
5	Recovery Fuel (1+2+3+4)	8000
6	Contingency (0+30)	2000
7	Tankered Fuel (only if req for next sortie)	0
8	Approach (only if not incl in enroute fuel)	0
9	Icing (1000 lbs if known/forecast)	0
10	Thunderstorms (1500 lbs if SCT or NUM)	0
11	Enroute (from CFP or block 11.5)	30000
12	Cat I Reserve (10% of Cat I fuel burn)	1600
13	Mission Fuel (5+6+7+8+9+10+11+12)	41600
14	Depressurization Fuel (from right column) Same as block H	0
15	Required Ramp Fuel Load (RRFL, 13+14)	41600
16	Actual Ramp Fuel Load	42000
17	Unidentified Extra (16 minus 15, not more than 2200 lbs)	400

Depressurization Fuel Planning

A	Min Landing (3000 lbs)	300
B	Depressurization Reserve (0+30)	200
C	Wing Relieving Fuel (if required)	0
D	High Altitude Fuel Burn from takeoff to ETP	1640
E	Low Altitude Fuel Burn from ETP to FSAF, 10K MSL, 260 KTAS	2000
F	Total Required (A+B+C+D+E)	4140
G	Normal Mission Fuel (from left column) Same as block 13	4160
H	Depressurization Fuel (F minus G) Zero if negative, move to block 14	0

Manual Flight Plan Calculation for Enroute Fu

11.1	STTO (norm 800 lbs)			800
11.2	Climb			250
11.3	Cruise (ETE*FF)	ETE 6+30	FF 4000	2600
11.4	Approach (norm 700 lbs)			700
11.5	Enroute Fuel (11.1+11.2+11.3+11.4)			3000

Chapter 15

AIR REFUELING

15.1. Not Used.

Chapter 16

COMBAT MISSION PLANNING

16.1. General. This chapter provides general C-130J combat mission planning guidance for planners and aircrews by standardizing procedures for planning, briefing, and reviewing all missions. Planners and aircrews should reference AFTTP 3-3.C-130J for detailed planning guidance. The aircrew is ultimately responsible for the accuracy of the mission materials.

16.1.1. Mission Planning. One full day of planning should be allocated for complex missions.

16.2. Drop Zone (DZ) Restrictions.

16.2.1. Authorized DZ types and restrictions are listed in AFI 13-217. Ensure DZs have adequate dimensions. Both pilots will verify CNI-MU CARP information with a valid DZ survey. Refer to AFI 13-217 for DZ survey information/requirements/applicability.

16.2.1.1. Use of unmarked DZs requires OG/CC approval for unilateral missions, and MAJCOM/A3/DO approval for all other peacetime training missions. Authorization to use unmarked DZs for contingency airdrops will be contained in SPINs, ATO or given by the DIRMOBFOR.

16.2.1.2. Area DZs are not authorized for mission computer directed airdrops.

16.2.2. Multiple Points of Impact (MPI). MPI placement must be coordinated with the user.

16.2.3. Multiple passes should be coordinated with the user during planning when necessary. If multiple passes are likely, they should be annotated on the chart. Unplanned racetracks may be performed provided crews have verified obstruction clearance.

16.3. Assault Landing Zone (ALZ) Restrictions.

16.3.1. Assault Landing Zone (ALZ) Selection. Detailed assault zone criteria and illustrations can be found in AFI 13-217. Both pilots will verify CNI-MU LZ information with a valid LZ survey. Refer to AFI 13-217 for LZ survey information/requirements/applicability.

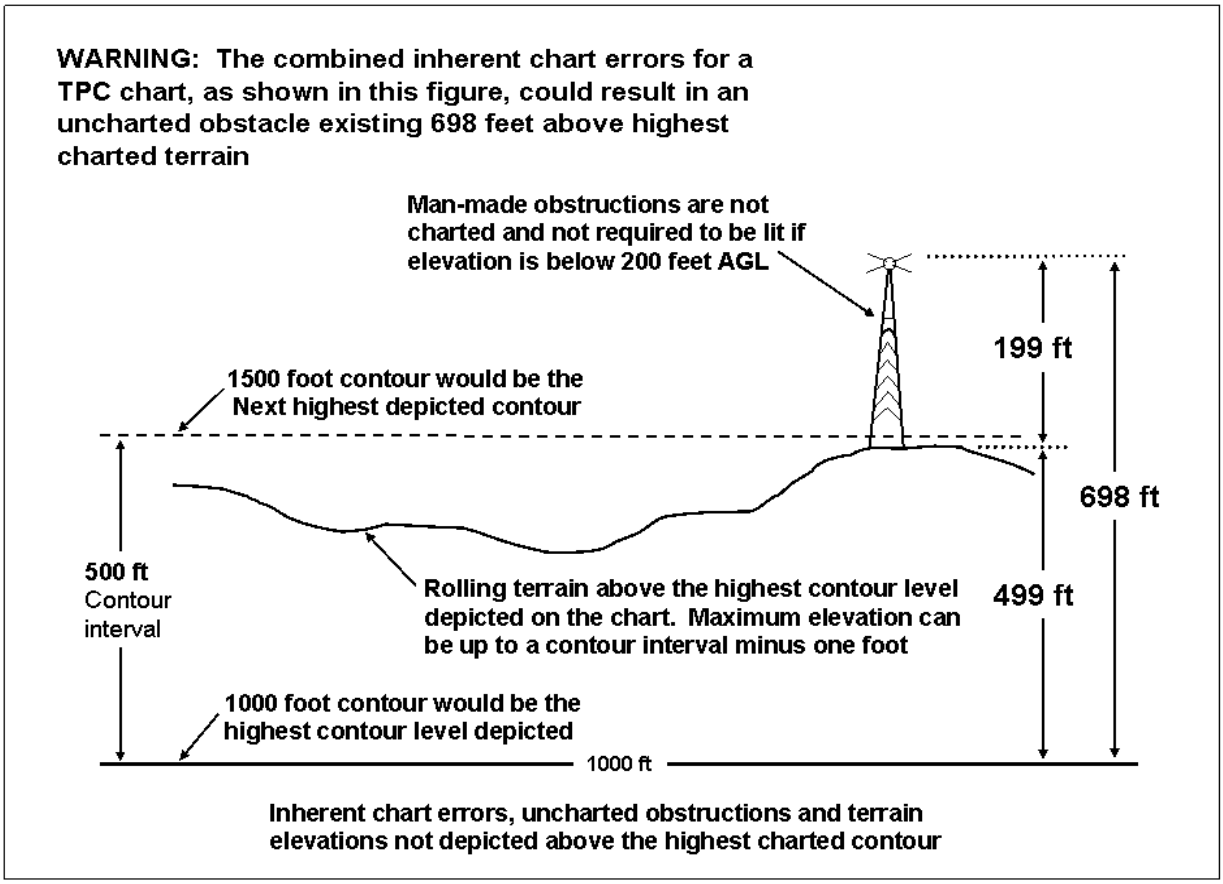
16.3.2. Approaches. Plan approaches to the ALZ IAW AFTTP 3-3.C-130J and airfield identification procedures published in the OPORD or SPINS. Brief any deviations from approaches described in AFTTP 3-3.C-130J.

16.3.3. Aircraft Performance Planning. Aircraft performance limitations must be planned for ALZ operations. Determining the maximum takeoff gross weight for worst-case conditions is an acceptable method to simplify mission execution.

16.4. Route Planning. Low-level flights will be planned using tactical corridors. Tactical corridors should be planned as wide as possible, to provide maximum situational awareness and flexibility. The standard width for a tactical corridor is 3 NM. Tactical corridor width can vary from 1 NM minimum either side of centerline, to as wide as desired (10 NM either side is the max recommended). Corridors do not have to be symmetrical, but must be annotated when different from the standard. As a rule of thumb, tactical corridors should be wide over flat terrain and narrow in mountainous terrain.

16.4.1. Low-Level Altitude Restrictions. The following minimum altitudes are established for C-130J operations. Higher altitudes may be dictated by FLIP/ICAO procedures, training considerations, terrain, or operational directives. ***WARNING:*** Aeronautical charts do not depict man-made obstacles less than 200 feet AGL or a change in terrain until it exceeds the chart contour interval. The worst situation would occur if a 199-foot tower sat on terrain with an elevation just below the next higher contour. For a TPC (1:500,000) with a contour interval of 500 feet, this results in an uncharted obstacle existing 698 feet above charted terrain. Additionally, the highest spot elevation on any given leg may not be the highest terrain as in the case of gradually rising elevations. Planners must ensure accurate terrain analysis evaluates both spot elevations and the highest contour level. ***CAUTION:*** Some charts may depict terrain and obstacle altitudes in meters versus feet (e.g., JOG and TLM charts in some areas of the world).

Figure 16.1. Inherent Chart Error.



16.4.1.1. Day VMC En Route. Fly no lower than 300 feet AGL modified contour altitude above the terrain using visual references and radar altimeter. Aircrew must comply with restrictions of paragraph **16.6.8** to fly below 500 feet AGL.

16.4.1.2. NVG En Route Altitude. Fly no lower than an indicated altitude of 500 feet above the highest spot terrain elevation, or 400 feet plus one basic contour interval above

the highest depicted terrain contour, whichever is higher, within the tactical corridor. Fly with reference to the pressure altimeter, using the radar altimeter as a backup.

16.4.1.3. Non-NVG En Route Altitude. Fly no lower than Minimum Safe Altitude as defined in paragraph **16.4.3**. Fly with reference to the pressure altimeter, using the radar altimeter as a backup.

16.4.1.4. Man-Made Obstacles. All man-made obstacles must be avoided by 1 NM laterally, or 500 feet vertically, unless visually identified. This applies for both day and night flights, and also includes obstacles outside of the planned tactical corridor. ***NOTE:*** If the planned altitude for a leg is more than 500‘ above a man-made obstacle, this obstacle is not a factor. When flying at 500‘ AGL or below, all obstacles are a factor.

16.4.2. IMC En Route Altitude. Fly no lower than 1,000 feet (2,000 feet in mountainous terrain) above the highest obstruction to flight (man-made obstruction, terrain feature, or spot elevation) within 5 NM of route centerline (10 NM outside the US unless 5 NM authorized by MAJCOM/A3). Round this altitude to the next 100-foot increment.

16.4.2.1. Minimum altitudes for IFR operations within published Military Training Routes (MTRs) in US sovereign airspace will be the computed leg MSAs unless a higher altitude is required by FLIP AP/1B.

16.4.3. Minimum Safe Altitude (MSA). MSA is an initial VFR altitude that provides additional terrain and obstacle clearance while the aircrew analyzes situations that require interruption of low-level operations (route disorientation and equipment malfunctions or when either pilot must leave the seat during low-level operations, etc). Plan MSA at an indicated altitude of 500 feet above the highest obstruction to flight (man-made obstacle, terrain feature, or spot elevation), or 400 feet plus one chart contour interval above the highest depicted terrain contour, whichever is highest, within 5 NM of route centerline to include turn radius. An MSA will be computed for each leg, route segment, or entire low-level route. See Figure 16.2.

16.4.4. Assembly. Assembly altitude under IFR will be at or above the MEA or MOCA on published airways. On direct flights off airways assembly altitude will be no lower than OROCA, ORTCA, or an altitude that provides 1,000 feet (2,000 feet in mountainous terrain) above the highest obstacle within a radius of 5 NM of the course. Under all conditions, aircrews ensure assembly altitude provides terrain and obstacle clearance for the formation.

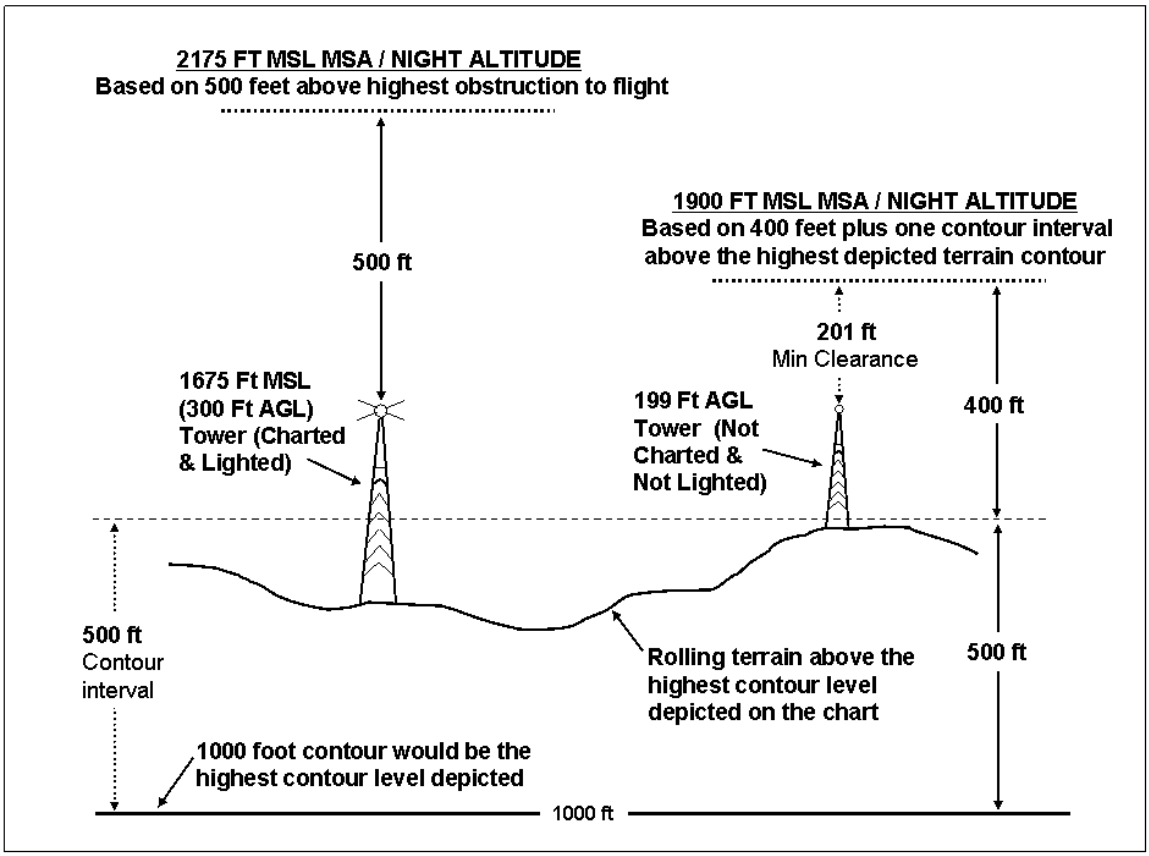
16.4.5. Emergency Safe Altitude (ESA). ESA is designed to provide positive IMC terrain clearance during emergency situations that require leaving the low-level structure. Planners may compute several ESAs for route segments transiting significant terrain differentials, or a single ESA for the entire low-level route. To compute ESA, add 1,000 feet (2,000 feet in mountainous terrain) to the elevation of the highest obstruction to flight within 22 NMs of planned route centerline.

16.4.5.1. ESA will be computed for the route and conspicuously annotated on the chart. ***NOTE:*** Climbing to ESA may put the aircraft in a controlled altitude structure requiring coordination with air traffic control agencies. ***NOTE:*** Pressure altimeters are calibrated to indicate true altitudes under international standard atmospheric (ISA) conditions. Any deviation from these standard conditions will result in erroneous readings on the altimeter. This error becomes important when considering obstacle clearances in

temperatures lower than standard since the aircraft's altitude is below the figure indicated by the altimeter. Refer to the flight information handbook to determine correction.

16.4.6. If planning low-level flight in areas where barometric altimeter settings will not be available, plan altimeter check points along the route to determine more accurate altimeter settings.

Figure 16.2. Minimum Safe Altitude.



16.5. Airdrop Restrictions: ***WARNING:*** DZ surveys do not assure terrain and obstruction clearance. Planners and aircrew are responsible for ensuring clearance through mission planning/chart preparation.

16.5.1. Day VMC Drop Altitude. Fly minimum airdrop altitudes as specified in AFI 11-231, visually avoiding high terrain and obstacles in the vicinity of the drop zone.

16.5.2. NVG Drop Altitude. Fly NVG En Route Altitude through slowdown. After slowdown, when the drop zone is in sight and will remain in sight, or when a positive position is identified and adequate terrain and obstacle clearance is assured, the aircraft may descend to the AFI 11-231 specified minimum drop altitude.

16.5.3. Non-NVG Drop Altitude. If not on NVGs, fly no lower than an indicated altitude of 500-feet above the highest obstruction to flight (man-made obstacle, terrain feature, or spot elevation), or 400-feet plus one contour interval above the highest depicted terrain contour, whichever is higher, within 3 NM of run-in centerline from slowdown through escape, or as

specified in AFI 11-231, whichever is higher. After slowdown, when the drop zone is in sight and will remain in sight, or when a positive position is identified and adequate terrain and obstacle clearance is assured, the aircraft may descend to the AFI 11-231 specified minimum drop altitude.

16.5.4. IMC Drop Altitude. Fly minimum IMC drop altitudes at 500 feet above the highest obstruction to flight (man-made obstruction, terrain feature, or spot elevation), or 400 feet plus one contour interval above the highest depicted terrain contour, whichever is higher, within 3 NM of the run-in centerline from DZ entry point to DZ exit point, or as specified in AFI 11-231, whichever is higher. During a parallel descent, do not descend to IMC drop altitude until the last aircraft of the element or formation is at or past the DZ entry point and all aircraft are within 3 NM of the run-in centerline.

16.5.4.1. IFR Drop Corridor. As defined in FAR Exemption 4371, the corridor where aircraft may transition between IMC en route altitude and IMC drop altitude to perform airdrop operations. The beginning of the corridor, the IFR Drop Corridor Ingress Point, is a maximum of 40 NM from the IFR Drop Corridor Egress Point (co-located with the DZ Exit Point). Plan segmented corridor altitudes not lower than 500 feet above the highest obstruction to flight (manmade obstruction, terrain feature, or spot elevation), or 400 feet plus one contour interval above the highest depicted terrain contour, whichever is highest, within 3 NM either side of centerline.

16.5.5. All airdrop missions must comply with appropriate FAA airspace restrictions. For all airdrops in uncontrolled FAA airspace, ensure a NOTAM is filed with the Flight Service Station nearest the objective area at least 48 hours in advance of the intended activity, regardless of actual or forecast weather. NOTAM information will include:

16.5.5.1. Name of the nearest city or town and state.

16.5.5.2. Date and time period of intended activity.

16.5.5.3. Number and type of aircraft.

16.5.5.4. Altitudes.

16.5.5.5. When IMC operations are planned, include IFR Drop Corridor Ingress and Egress points of the route segment expressed in radial and DME from a NAVAID.

16.6. Peacetime Route Restrictions. In addition to restrictions in AFI 11-202V3, specific country or theater of operations publications, and FLIP area planning, routes will not be planned or flown:

16.6.1. With less than 1 NM separation (3 NM in excess of 250 KIAS) when below 2,000 feet AGL from known sensitive environmental areas such as hospitals, fish hatcheries, ostrich and emu farms, large poultry complexes, recreation areas, institutions, and similar locations.

16.6.2. With less than 3 NM separation from prohibited airspace.

16.6.3. Less than 3 NM separation from nuclear power plants.

16.6.4. Through restricted airspace, except transition or termination in such areas where the planning unit is a primary using agency or has approval of the controlling agency.

16.6.5. In weather conditions less than specified in this AFI and AFI 11-202V3.

16.6.6. Below 1000' AGL within a 2000' radius over cities or towns shown as magenta shaded areas on 1:500,000 (TPC) scale charts.

16.6.7. Over or through active live fire or impact areas that may not be specifically designated as prohibited or restricted areas.

16.6.8. Below 500 feet AGL unless:

16.6.8.1. Host nation rules specifically allow such VFR operations.

16.6.8.2. Routes or training areas have been environmentally assessed and surveyed for 300-foot AGL operations. ***NOTE:*** This restriction does not apply to one-time-use routes. Consult FLIP AP/1B for published Military Training Route restrictions.

16.7. Navigation Chart Preparation. Mission planners will construct a master chart for mission briefings and aircrew reference. Planners may construct the chart using computerized mission planning systems if available. Digital Map displays are the primary reference for low-level navigation; however, the crew will carry a tactical navigation chart. As a minimum, tactical navigation charts will be annotated with the following: turn points, IP, DZ, course line, course data, CHUM data, and ESA. CHUM coverage must include all 30‖ quadrangles (1:500,000 scale charts use 30‖ quadrangles) that touch or are adjacent to quadrangles touched by the tactical corridor. ESA will be computed for the route and conspicuously annotated on the chart.

16.8. Mission Forms and Logs. The crew will carry an approved flight log in accordance with AFI 11-202V3.

16.9. Navigation System.

16.9.1. Verification. Visual references and radar Offset Aim Points (OAPs) can be used to verify/update navigation systems according to airland or airdrop mission requirements. The following solutions are acceptable for verifying/updating the navigation system, listed in order of preference:

16.9.1.1. OAPs generated by a targeteer during planning, with precision coordinate and elevation information, including those listed in PFPS. Advance coordination with a targeteer is normally required. If targeteer information is not available, mission planners and aircrew may generate OAPs. Ideally OAPs should be 5-10 miles apart and approximately 45 degrees off of plotted course, if able.

16.9.1.2. Visual Reference Points (VRPs) generated during planning, which include any identifiable point with precision latitude/longitude and elevation information. This includes turn points, or identifiable structures such as an ECHUM tower.

16.9.1.3. Ad hoc references derived from a navigation chart, such as a road intersection or power-line crossing.

16.9.2. Required Navigation Accuracy. The navigation accuracy required for a given mission will vary depending on the type of mission and other considerations. For all airdrops and Self-Contained Approaches (SCAs) plan to verify navigation accuracy within 10 minutes of slowdown/FAF. For IMC routes, navigation accuracy will be verified at least hourly.

16.10. Route Study. Crew route study is mandatory before accomplishing flight in the low-level environment. At a minimum, discuss aircrew coordination, division of duties, and threat avoidance.

Chapter 17

AIRLAND EMPLOYMENT

17.1. General. Detailed airland employment guidance can be found in AFTTP 3-3.C-130J Chapter 7, *Airland Operations*.

17.2. Passengers on Tactical Flights.

17.2.1. MAJCOMs will establish guidance for when passengers are allowed on tactical flights. When flying AMC missions AMCI 11-208 governs this requirement.

17.3. Self Contained Approaches.

17.3.1. The C-130J mission computer can derive approach course guidance using the LZ approach or IPRA functions. The approach course guidance however, does not ensure obstacle clearance. The mission computer only mathematically derives a final approach course and glide path from pilot input data.

17.3.2. VMC SCAs. Aircrew may build and fly a SCA as necessary. The PM will visually ensure obstacle and terrain clearance.

17.3.3. IMC SCAs. IMC SCAs will be flown with the following restrictions:

17.3.3.1. SCAs will only be flown from a published SCA approach as defined in AFI 11-202V3 paragraph **8.3.1.1**.

17.3.3.2. Required navigation accuracy for an SCA is:

17.3.3.2.1. To provide an early indication of degraded navigation accuracy, set the POS ALERT(s) at 0.03 NM (55 yards; FOM 2) and 0.05 NM (110 yards; FOM 4).
If both INAV solution FOM's are less than or equal to 4 and no POS ALERTS (INAV Pos Miscompare ACAWS/INAV Pos Difference ACAWS) are indicated, navigation airdrop accuracy (300 yd CEP) is verified. If these conditions are not met a radar or visual update is necessary to verify/improve navigation accuracy prior to performing SCAs. ***NOTE:*** Anytime a position bias (update) has been added to the EGI INAV solution, displayed FOM values do not reflect the result of the bias.

17.3.3.2.2. For any SCA, verify navigation accuracy within 10 minutes of the FAF. Do not descend from FAF altitude without verifying the active ship solution if any of the following conditions exists: either FOM greater than 4, INAV Pos Miscompare ACAWS, or INAV Pos Difference ACAWS.

17.3.3.3. Both pilots will verify runway point of intercept (RPI) or LZ coordinates in the mission computer. Both pilots will verify CNI-MU LZ information with a valid LZ survey. Refer to AFI 13-217 for LZ survey information/requirements/applicability.

17.3.3.4. WX minimums will be IAW the published procedure, but no lower than 300-1.

17.4. Tactical VFR Approaches.

17.4.1. Operations to unmarked/unlit LZ are IAW AFI 11-202V3 and AFI 13-217.

17.4.2. During the turn to final, do not slow below normal 100% flap approach speed. For maximum effort landings, the pilot will not slow to Maximum Effort Approach Speed prior to initiating the roll out on final. Roll out on final no lower than 150 ft AGL.

17.5. Engine Running Offload and Onload (ERO) Procedures.

17.5.1. Use ERO procedures when necessary to expedite aircraft or cargo movement, meet time requirements of unit moves, joint training exercises, and contingencies or enhance crew duty day.

17.5.2. With the exception of small arms ammunition (Hazardous Class/Division 1.4), do not use ERO procedures when explosive cargo is involved unless authorized in the JA/ATT, exercise, operation or contingency air tasking order.

17.5.3. ERO procedures may be used for any mix of personnel or cargo. Material handling equipment should be used if palletized cargo is to be onloaded or offloaded. PICs must assess prevailing weather, lighting and parking location to ensure safe operations. ***NOTE:*** At their discretion, ACs may ERO any category of passenger. The number of passengers and amount of baggage to be onloaded or offloaded should be taken into consideration. The well being of the passengers should be considered at all times. ***WARNING:*** Do not onload or offload through the crew entrance door and cargo ramp and door at the same time. Paratroop doors will not normally be used.

17.5.4. After the aircraft is slowed to taxi speed, the loadmaster may remove all tie-downs except one forward and one aft restraint, open the aft cargo door, and position the ramp no lower than horizontal. ***WARNING:*** If a combat offload of pallets is to be accomplished before offloading vehicles, do not remove any vehicle restraint until after the combat offload is complete. ***NOTE:*** Loadmasters will ensure vehicles and troops proceed directly aft of the aircraft at least 50 feet before turning and/or 300 feet before stopping. ***NOTE:*** If downloading to an empty aircraft, a DD Form 365-4 is not required. Ensure the PERF WT and WT and BALANCE pages of the CNI-MU are updated prior to takeoff.

17.6. Combat Offload Procedures.

17.6.1. Combat offload provides a means of offloading single, multiple, and married pallets, airdrop platforms, or container delivery systems (CDS) without the use of material handling equipment. The controlling C2 commander, MAJCOM/A3 or the DIRMOBFOR may authorize combat offload when conditions warrant. The method of combat offload will be determined by the aircrew based on the conditions at the offload site. Unit OG/CC may approve unilateral combat offload training.

17.6.2. Combat Offload Method A.

17.6.2.1. A taxiway or ramp at least 500 feet long is required, however, 1,000 feet is desired to provide a margin of safety. When pallets, platforms, or containers are offloaded one at a time, use a longer taxiway based on the number to be offloaded. ***WARNING:*** Many explosive items have specific ―drop‖ criteria that, if exceeded, render the item useless or dangerous to the user. Explosives and munitions shall not be combat offloaded without approval of MAJCOM/A3/DO. ***EXCEPTION:*** Small arms ammunition (hazard class and division 1.4) and explosives/munitions rigged for airdrop may be combat offloaded without MAJCOM/A3/DO approval. ***CAUTION:*** When using

method A on excessively rough, sharply undulating, or battle-damaged surfaces, damage to the aircraft ramp may occur. Reducing forward taxi speed on these surfaces will reduce aircraft oscillation. The AC must determine if the offload area will permit the offload operation to be conducted without damage to the aircraft or equipment.

17.6.2.2. Combat offload of fragile and sensitive cargo items (i.e., computers) that might be damaged by standard method A combat offload procedures will not be attempted without user concurrence. If the nature of the mission dictates that cargo must be offloaded, aircrews may lower the ramp to approximately 18 inches above the ground. ***CAUTION:*** Do not attempt to lower the ramp below horizontal unless the UNRESTRICTED RAMP TRAVEL light is illuminated. ***EXCEPTION***: UNRESTRICTED RAMP TRAVEL light will not illuminate when cargo compartment lights are in the covert position. ***NOTE:*** Normal Method A procedures cannot be used with the ramp below the horizontal position. In this case the loadmaster must release the locks using either the PLCUs or RECP Jettison switches.

17.6.2.3. Pallets may be offloaded, without ballast, using this method provided their total weight does not exceed 12,000 pounds, and the height of the pallets fall within cargo height jettison limit in section III of the flight manual or section V of the cargo loading manual

17.6.2.4. Airdrop rigged platforms up to 24 feet in length may be offloaded, without ballast, using this method provided their weight does not exceed 12,000 pounds. ***NOTE:*** Pallets and airdrop rigged platforms over 12,000 pounds total weight may be offloaded using this method, provided ballast or cargo equal to the difference between 12,000 pounds and the weight of the pallets or platforms (to be offloaded) remains in C through F compartments during offload. Example: A 17,000 pound married pallet or airdrop platform requires 5,000 pounds of ballast or cargo to remain in C through F compartments during the offload.

17.6.2.5. CDS may be combat offloaded using this method. The static line retriever will be used via manual activation; manual gate cut may be done if the retriever is inoperative. With Centerline Vertical Restraint (CVR), offload will be accomplished one side at a time if the total bundle weight exceeds 12,000 pounds. Non-CVR sticks may be offloaded if the total weight is less than 12,000 pounds. Without the CVR, if the total weight of the bundles exceeds 12,000 pounds bundles should be restrained in groups of four or less and offloaded one group at a time. For the unplanned combat offload of non-CVR bundles, restrain the bundles as described above. Perform an initial offload via the static line retriever, and on sequential offload remove aft restraint before clearing the pilot to taxi. Consider the slope of the offload site which may cause bundles to roll aft upon removal of restraint.

17.6.3. Combat Offload Method B. Use this method to offload married pallets that do not fit the category for method A or for which no ballast is available for married pallets weighing between 12,000 to 15,000 pounds. Use four serviceable steel 55-gallon drums under each pallet to be offloaded. The correct number of steel drums needed to complete this type of offload must be available at the offload site or must accompany the load when conditions at the offload site are unknown. ***WARNING:*** The maximum weight for pallets to be off-loaded across the ramp at any one time when using method B is 15,000 pounds. Do not use

method B for airdrop-rigged platforms to prevent binding the platform under the vertical restraint rails.

Chapter 18

AIRCRAFT FORMATION

18.1. General. The standard formation building block is a two-ship element. Procedures and techniques to fly C-130J formation are outlined in AFTTP 3-3.C-130J. Formation procedures will be conducted in accordance with this chapter and TO 1C-130J-1. Consider safety, aircrew capability, proficiency, survivability and user needs when planning any formation tactic.

18.2. Specified Times. The mission commander determines the sequence of events and mission times based on ATO, FRAG, planning staff input, fuel requirements, parachutist /passenger comfort, taxi distances, briefing requirements, etc.

18.3. Weather Minimums. Formation takeoff and landing minimums are the minimums for the lowest suitable approach at the airfield, but not lower than 200 feet and one-mile visibility (RVR 5000). During IFR formation operations, adhere to both ceiling and visibility minimums. If departure ceiling or visibility is below published landing minimums, but above 200 feet and one-mile visibility (RVR 5000), the formation may take off if the requirements for a departure alternate as prescribed in **Chapter 6**, are met. If the runway has dual RVR readouts (approach and departure end of the runway) both ends must be at least RVR 5000.

18.4. Ground Operations. Minimum taxi interval is one aircraft length with four engines operating and two aircraft lengths with two engines operating (or two in HOTEL mode).

18.5. Takeoff.

18.5.1. The minimum takeoff interval between aircraft is 15-seconds.

18.5.2. For aborts during takeoff, the PM immediately transmits an abort call (three times using formation position number) on interplane. When the situation allows, the PM will repeat the call on primary ATC frequency. Clear the runway as quickly as safety allows. Succeeding aircraft not on takeoff roll will hold until the runway is clear.

18.5.3. To prevent damage to succeeding aircraft, do not advance power above flight idle until takeoff roll is started. Use a judicious and smooth application to achieve takeoff power

18.5.4. Formation leaders ensure all aircraft use the same altimeter setting.

18.6. En Route.

18.6.1. At no time will aircraft be operated within 500 feet of another aircraft.

18.6.2. Lead will announce airspeed changes of 15-knots or greater at night.

18.6.3. Inadvertent weather penetration procedures will be briefed to the formation. At a minimum, formation lead will direct the formation to a safe altitude, heading, airspeed, and aircraft spacing.

18.7. No-Drop Decisions. When a situation requires a formation no-drop, lead will notify the flight over interplane and all aircraft will acknowledge. If radio silence is necessary, lead will pass a SKE no-drop command. Do not transmit individual aircraft no-drops outside the aircraft.

18.8. Visual Procedures.

18.8.1. Departure and Assembly. After crossing the runway departure end, wingmen adhere to ATC requirements and assume the pre-briefed position.

18.8.2. Visual Rejoins.

18.8.2.1. The rejoining aircraft will establish a minimum of 500 feet altitude separation until the formation is in sight and clearance to rejoin is granted.

18.8.2.2. Rejoining aircraft must be in position at formation altitude by ―green light‖ to accomplish the drop.

18.8.3. Tactical Formation Maneuvering (TFM). Both pilots must be on NVGs to fly TFM at night.

18.8.4. Visual Run-In and Slow Down. Unless tactically unsound, night slowdowns will include an aural or visual signal.

18.8.5. Drop Execution. Regardless of the type of drop spacing being used (In-Trail, pre-briefed, etc.), the minimum drop spacing is 2,000 feet from the preceding aircraft. Wingmen will notify lead if they see any situation which may result in an unsafe or inaccurate airdrop. Refer to paragraph **19.9** for additional wingman airdrop considerations. ***WARNING:*** Dropping at a lower altitude than the preceding aircraft may cause loads or personnel to impact the lower aircraft, causing damage or fatalities.

18.8.5.1. CDS Airdrop. Minimum spacing to drop CDS in formation is 6,000 feet. Aircraft not dropping CDS and using 50 percent flaps may establish normal spacing following a CDS aircraft. ***WARNING:*** Attempting to regain position by only reducing power or airspeed places the aircraft in a nose high, low-power situation and may lead to a stall.

18.8.6. Visual Recovery.

18.8.6.1. For formation recoveries roll out on final at no less than 150 feet AGL.

18.8.6.2. Desired landing interval is 20 seconds; minimum is 15 seconds.

18.8.6.3. Do not perform touch-and-go landings during formation recoveries.

18.9. CAPS/SKE Procedures.

18.9.1. Accomplish a SKE flight command check prior to takeoff by passing a single command.

18.9.2. Priority of maneuvers/signals is (1) altitude, (2) heading, and (3) airspeed. Element leads immediately relay acceleration, deceleration, climb, and descent CAPS commands.

18.9.2.1. All altitude changes will be signaled.

18.9.2.2. Lead will signal unplanned heading changes of more than 10 degrees.

18.9.2.3. Lead will signal accelerations and decelerations of greater than 10 knots. ***CAUTION:*** With autothrottles engaged in CAPS mode, commanded speeds may be above aircraft configuration limiting speeds.

18.9.3. Do not couple the autothrottles to CAPS until in formation position and at assembly altitude.

18.9.4. SKE Orbit/Rejoin Procedures.

18.9.4.1. Maintain 1,000 feet above or below the formation until in position and permission to rejoin is granted.

18.9.4.2. The rejoining aircraft must be stabilized in position at formation altitude by the IP (IMC) or by one-minute prior to TOT (VMC) to accomplish the drop.

18.9.5. SKE En route Procedures. Normally, spacing for CAPS/SKE formation is 4,000 feet for wingman and 8,000 feet for element leads. Minimum spacing between aircraft will be 4,000 feet. The cross-path distance for en route navigation is 700 feet in the most appropriate direction for the wingman aircraft and 0 cross-path for element leads. ***NOTE:*** During long missions, mission commanders may extend en route spacing and/or cross-track to reduce fatigue, as required.

18.9.6. Loss of SKE. Notify lead in all cases.

18.9.6.1. Loss of all SKE indications in IMC will require a breakout. Use the following procedure if an alternate plan was not briefed:

18.9.6.2. If the formation is in straight and level flight climb 500 feet, turn 30 degrees in the safest direction from the base heading for 30 seconds, and then return to base heading. If the formation is in a turn roll out and climb 500 feet. Lead will contact (or direct contact to) ATC for a separate clearance. ***CAUTION:*** Performing the above maneuvers in a radar pattern may place an aircraft outside of protected airspace.

18.9.7. Run-In and Slowdown. Do not initiate descent from the last en route altitude until the following conditions are met:

18.9.7.1. Own position is positively known.

18.9.7.2. Within 3 NM of DZ run-in course centerline; to include CAPS/SKE timing only wingmen.

18.9.7.3. At or past the DZ entry point; to include wingmen for parallel descents.

18.9.8. Drop Execution.

18.9.8.1. Overrunning aircraft must regain position by one minute prior to TOT, or a no drop will be executed.

18.9.8.2. CDS Airdrop. Minimum spacing to drop CDS in formation is 6,000 feet. Aircraft not dropping CDS and using 50 percent flaps may establish normal spacing following a CDS aircraft. ***WARNING:*** Attempting to regain position by only reducing power or airspeed places the aircraft in a nose high, low-power situation and may lead to a stall.

18.9.9. DZ Escape. Assembly altitude after the drop will comply with normal IFR en route altitude restrictions.

18.9.10. SKE Recovery.

18.9.10.1. The flight director should not be in CAPS mode once established on the final approach segment for SKE instrument approaches. This does not preclude CAPS information from being displayed via the AMU.

18.9.10.2. The interval between aircraft on final is 6,000 feet desired, 5,000 feet minimum.

18.9.10.3. International Civil Aviation Organization (ICAO) Approaches. There are no procedures for executing ICAO 45/180 and 80/260 procedure turn approaches, so these are flown single-ship only.

18.9.11. Do not perform touch-and-go landings during formation recoveries.

18.10. I-CDS Formation Airdrop.

18.10.1. All aircraft will fly to an individual JPADS-MP derived CARP. If an aircraft is unable to calculate its own CARP using the JPADS-MP a separate aircraft can pass CARP coordinates provide that the load‘s flight station and weights are the same. Otherwise, the aircraft must build (or have ready) the other aircraft‘s load information in order to calculate an individual CARP and pass it back.

18.11. Guided Container Formation Airdrop.

18.11.1. All aircraft will fly to an individual JPADS-MP derived CARP or be within the Launch Acceptability Range (LAR). In addition, formation spacing must provide a minimum of 3 seconds spacing between the last bundle dropped from the previous aircraft and the first bundle dropped from subsequent aircraft. This is to prevent any bundles entangling as the bundles attempt to ―fly‖ to the same point in space. Instead of flying formation to the JPADS-MP derived CARP, consider sending aircraft on different routing within the LAR.

18.12. C-130E/H/J Interfly Procedures.

18.12.1. When a C-130E/H departs behind a C-130J, use a 15-second minimum takeoff interval. When a C-130J departs behind a C-130E/H, use a 25-second minimum takeoff interval to ensure an adequate safety margin for wake vortices and to prevent compression on takeoff. For safety purposes, the above assumes all aircraft use their standard takeoff power setting for the formation takeoff.

18.12.2. SKE En route Spacing. All CAPS/SKE formations are flown with standard 2-ship elements. ***EXCEPTION:*** The wingman in each element maintains 4000 feet ITRK (A-PATH) from their element, with 500 feet XTRK (X-PATH) to the right of lead.

Chapter 19

AIRDROP

19.1. General. This chapter prescribes C-130J employment procedures for all airdrop operations. For additional guidance and information, refer to AFTTP 3-3.C-130J.

19.2. Identification of Airdrop Items. It may be necessary to identify items that are not dropped or land off the DZ in unsecured areas.

19.2.1. Identify supplies or equipment by the following class numbering system:

19.2.1.1. Class I - Subsistence.

19.2.1.2. Class II - Individual equipment.

19.2.1.3. Class III - POL.

19.2.1.4. Class IV - Construction materials.

19.2.1.5. Class V - Ammunition (include the type):

19.2.1.5.1. Type ―A‖ - Small arms.

19.2.1.5.2. Type ―B‖ - Mortars.

19.2.1.5.3. Type ―C‖ - Artillery.

19.2.1.6. Class VI - Personal demand items.

19.2.1.7. Class VII - Major end items (vehicles, howitzers, etc.).

19.2.1.8. Class VIII - Medical supplies.

19.2.1.9. Class IX - Repair parts.

19.2.1.10. Class X - Non-military programs (i.e. agricultural supplies).

19.2.2. Airdrop loads may also be identified by the following internationally recognized color coding system for combined operations:

19.2.2.1. Red - Ammunition and weapons.

19.2.2.2. Blue - Fuel and lubricants.

19.2.2.3. Green - Rations and water.

19.2.2.4. Yellow - Communications equipment.

19.2.2.5. White (or Red Cross on white background) - Medical supplies.

19.2.2.6. Black and white stripes - Mail.

19.3. Airdrop Kits. The loadmaster will carry enough equipment in the airdrop kit to satisfy load or mission requirements. Minimum contents of airdrop kits will include cloth-backed pressure sensitive tape, 1/2-inch tubular nylon cord, 550 cord, 5 cord, 80 pound cotton webbing, and four carabiners (NSN 4240-01295-4305 or equivalent carabiner with a locking mechanism)..

19.4. Joint Airdrop Inspection.

19.4.1. The loadmaster will complete the applicable DD Form 1748, **Joint Air Drop Inspection Records**, before takeoff (see AFJI 13-210(I) *Joint Airdrop Inspection Records, Malfunction/Incident Investigations, and Activity Reporting* for specifics) and verify the accuracy of cargo and troop documentation. The Joint Airdrop Inspector will check all possible items for all loads to be dropped during that mission. For loads that require in-flight rigging, the Joint Airdrop Inspector will annotate on the DD Form 1748 which items are required to be completed during flight, and the aircrew loadmasters will ensure those items are completed and checked. No further inspections by the Joint Airdrop Inspector are required. Reject loads with inaccurate or unavailable weights, or loads hazardous to flight. ***NOTE:*** Equipment not rigged per 13C-series technical orders (TO) or Joint Special Operations Command (JSOC) 350 series manuals, requires a waiver from the appropriate MAJCOM Tactics agency/division.

19.4.2. If airdrop and airland loads are carried at the same time, see the restrictions listed in **Table 19.1** These restrictions are designed to prevent airland loads from interfering with airdrop rigging equipment.

Table 19.1. Load Planning Restrictions.

	RESTRICTIONS	MINIMUM DISTANCE (INCHES)
1.	RETRIEVER WINCH CABLE/PULLEY FROM AIRCRAFT FLOOR	84‖
2.	DISTANCE BETWEEN ANCHOR CABLES; (a) CDS OR EQUIPMENT (b) PERSONNEL [1] (1) FORWARD BULKHEAD (2) INTERMEDIATE SUPPORTS	 108‖ 6‖ INBOARD, 64‖ OUTBOARD 76‖ INBOARD, 76‖ OUTBOARD
3.	AIRLAND CARGO HEIGHT	CANNOT INTERFERE WITH OVERHEAD RIGGING EQUIPMENT CDS ONLY – 80‖ HEIGHT[2]
4.	CARGO LOCATIONS ON PERSONNEL AIRDROPS (STATIC LINE OR HALO)	TROOP DOOR EXIT: NO CARGO BETWEEN LS 857-937 (FS 657-737). RAMP EXIT: FORWARD OF LS 900 (FS 700).
5.	PASSENGER/PERSONNEL DISTANCE FROM AIRDROP RIGGING EQUIPMENT	60‖
6.	SAFETY AISLE TO REAR OF AIRCRAFT[3]	ALL MISSIONS, ALONGSIDE OR OVER TOP OF CARGO
7.	ACCESS TO OPERATE AIRDROP EQUIPMENT	TROOP SEATS NOT USED 1L AND 2L.

NOTES:

(1) Personnel airdrops may be performed with only one troop door configured for airdrop with user concurrence.

(2) Will not exceed 80‖ within 12‖ either side of retriever cable. Height of cargo outside of the 12‖ left and right (total 24‖) may exceed the 80‖ height limitation, but will not interfere with overhead rigging equipment.

(3) CDS and heavy equipment configuration. A maximum of three rows of nylon seats may be used. The remaining vacant row serves as a safety aisle. All sidewall seats will be raised or stowed in the wheel-well area when airland pallets and vehicles are located within this area and exceed 96‖ width.

19.5. Verification Of And Marking Airdrop Loads. A pilot will verify with the loadmaster the actual number and type of parachutes, load weights, sequence of extraction, and position of loads in the aircraft agree with planned CARP data. If an individual load has a different type or number of parachutes from other loads, compute a CARP for each load to ensure all loads will land on the DZ. Base drop altitude on the item requiring the highest drop altitude. For training missions (e.g. unilateral, exercise, or JA/ATT) the loadmaster will coordinate with the pilots to ensure all equipment, drogues, CDS containers, and standard airdrop training bundles are marked with the aircraft call sign and date. If more than one load is dropped on the same pass, mark loads with order of exit from aircraft. Markings will be placed on the extracted end of the load, and on the drogue line. (***EXCEPTION***: If more than one CDS bundle is dropped on the same pass, mark only the first container out.)

19.6. Safety Equipment. Personnel required to be mobile in the cargo compartment during low-level phases will wear protective headgear from the combat entry point to the combat exit point if an actual threat is briefed. ***EXCEPTION:*** Personnel performing water jumps. All other personnel will be seated with the seat belt fastened. Loadmasters will lower their helmet visor when near an open door (except when NVGs are used) and keep it lowered until doors are closed. As a minimum, the helmet will be worn from the start of the Drop Preparation Checklist until the Completion of Drop Checklist. Loadmasters will be on interphone from completion of Drop Preparation Checklist until Completion of Drop Checklist.

19.6.1. During airdrops, the loadmaster will wear either a restraint harness, or a parachute, from the Drop Preparation Checklist until doors are closed and locked. ***WARNING:*** During the aircrew briefing, the AC will brief the loadmaster(s) when the mission profile requires flight below 800 feet AGL with the door(s) open. ***WARNING:*** The loadmaster(s) must wear a restraint harness when performing duties near an open exit above 14,000 feet MSL or below 800 feet AGL.

19.6.2. When used, fit the restraint harness and adjust the lifeline before flight as follows:

19.6.2.1. Troop door drops. Connect the hook to tiedown ring 32D (26D) and adjust the lifeline to allow mobility only to the troop door for installation of the paratroop retrieval strap/bar and to accomplish other emergency procedures.

19.6.2.2. Troop door SATB drops. Connect the lifeline as described in paragraph **19.6.2.1** or to a floor/ECHS rail tiedown ring at LS 977 (FS 677) and adjust to allow

mobility only to the troop door being used. If mobility is required forward of the troop doors during troop door SATB drops the lifeline may be attached to a floor/ECHS rail tiedown ring at LS837 (FS637) and adjust to allow mobility only to the troop door being used.

19.6.2.3. Ramp and door operations.

19.6.2.3.1. Personnel tailgating operations. Connect the hook to a floor/ECHS tiedown ring no further aft than LS 1017 (FS 737). Adjust the lifeline to allow mobility to LS 1115 (FS 835), and to a point that will preclude the wearer from exiting the aircraft. Restraint harness lifelines may be attached to an unused anchor cable provided the anchor cable stop is positioned and taped at LS 1017 (FS 737).

19.6.2.3.2. HE/CDS/CRRC/CRL/JPADS operations. Connect the hook to a floor/ECHS tiedown ring no further aft than LS 1017 (FS 737), adjusting to a point that will preclude the wearer from exiting the aircraft. Restraint harness lifelines may be attached to an unused anchor cable provided the anchor cable stop is positioned and taped at LS 1017 (FS 737). ***WARNING:*** Except for an actual contingency, towed trooper, or emergency that threatens the survivability of the aircraft and crew, the restraint harness will not be disconnected or lengthened to a point that would allow the loadmaster to fall outside the aircraft. ***WARNING:*** Anchor cables will be inspected IAW TO 1C-130J-9.

19.6.3. Loadmasters will wear a life preserver unit (LPU) for operations over bodies of water when doors are open and a parachute is worn instead of a restraint harness.

19.6.4. During an airdrop, occupants in the cargo compartment will have a seat belt fastened. Personnel required to be mobile will wear a restraint harness, or wear a parachute before doors are opened. ***EXCEPTION:*** Flight examiner loadmasters are exempt from wearing a parachute or restraint harness while conducting flight evaluations provided they do not go aft of LS 977 (FS 677). For static line jumps, static lines are attached to anchor cables before doors are opened. ***EXCEPTION:*** Jumpers exiting on subsequent passes (racetracks) may stand and hook up with doors open if they are forward of the aft edge of the wheel wells LS 817 (FS 617.). ***NOTE:*** Do not use flight deck restraint harness for airdrops.

19.6.5. JA/ATT or exercise orders will determine if additional parachutes are required for user safety personnel during training missions. If JA/ATT orders require parachutes for safety personnel, crews will ensure they are on board prior to departure. User safety personnel will provide their own parachutes for contingency missions.

19.7. Airdrop Weather Minimums and Wind Restrictions. Refer to AFI 13-217 and AFI 11-231 for airdrop weather minimums and wind restrictions. SATB drops may be accomplished at less than 300 and 1/2 with DZCO approval. The Army Drop zone safety officer determines the suitability of surface conditions on the DZ for airdrops during joint training operations.

19.8. Airdrop Checklist. Airdrop checklists are located in the TO 1C-130J-1.

19.8.1. The ―twenty minute‖, ―ten minute‖, ―six minute‖, ―one minute‖, and ―five second‖ advisories are required for all personnel airdrops. Only the ―one minute‖ and ―five second‖ advisories are required for equipment and CDS airdrops.

19.9. Navigation Accuracy.

19.9.1. To provide an early indication of degraded navigation accuracy, set the POS ALERT(s) at 0.03 NM (55 yards; FOM 2) and 0.05 NM (110 yards; FOM 4). If both INAV solution FOM's are less than or equal to 4 and no POS ALERTS (INAV Pos Miscompare ACAWS/INAV Pos Difference ACAWS) are indicated, navigation airdrop accuracy (300 yd CEP) is verified. If these conditions are not met a radar or visual update is necessary to verify/improve navigation accuracy prior to performing airdrops. ***NOTE:*** Anytime a position bias (update) has been added to the EGI INAV solution, displayed FOM values do not reflect the result of the bias.

19.9.2. For all airdrops, verify navigation accuracy within 10 minutes of slowdown. Do not continue an airdrop without verifying the active ship solution if any of the following conditions exists: either FOM greater than 4, INAV Pos Miscompare ACAWS, or INAV Pos Difference ACAWS.

19.10. Methods of Aerial Delivery.

19.10.1. The primary method of aerial delivery for the C-130J is automatic release at the computer derived release point. See paragraph **16.9.2**. for navigation system accuracy requirements.

19.10.2. Both pilots will verify DZ point of impact coordinates in the mission computer. Both pilots will verify CNI-MU CARP information with a valid DZ survey. Refer to AFI 13-217 for DZ survey information/requirements/applicability.

19.10.3. Airdrops are not allowed if a CARP XTK or CARP VERT is displayed. ***NOTE***: During low drift situations (3 degrees or less); if the wingman maintains the correct CAPS wing position and the lead aircraft is on the correct run-in, a CARP XTK advisory may result. Refer to AFTTP 3-3.C-130J for techniques to avoid this situation. During contingency operations, the DIRMOBFOR or equivalent may approve manual drops (pushing green light switch based on visual reference to PI only) for increased flexibility of PI placement. ***EXCEPTION:*** Continuing an airdrop with CARP XTK displayed or performing a manual drop is permissible for alternate airdrop methods.

19.11. High Altitude Airdrop Requirements. Only essential personnel who have accomplished appropriate physiological training described in AFI 11-403 are permitted on mission aircraft for airdrops above 10,000 feet MSL.

19.11.1. A continuous supply of 100 percent oxygen will be used by all personnel during unpressurized operations above 10,000 feet MSL. Crewmembers will follow established MAJCOM oxygen mask requirements. ***Exception***s are as follows:

19.11.1.1. Students of the Military Free Fall School, Parachutist Course (MFF-PC) will have a qualified USAF Physiology Technician onboard and positioned in the aft portion of the cargo compartment when aircraft is between 10,000-13,000 feet MSL for longer than 30 minutes. Unpressurized flights between these altitudes will not exceed 2 hours. Under circumstances where a USAF PT is unavailable, a US Army 18 Delta Medic or USAF Pararescue trained and certified by HQ ACC/SGOP may be used. Supplemental oxygen will be supplied by an oxygen console provided by the Military Free Fall.

19.11.1.2. Students of the Military Free Fall School, Jumpmaster Course (MFF-JM): There is no requirement for a USAF PT to be onboard for unpressurized operations

between 10,000 and 13,000 feet MSL. However, the parachutists will breathe 100% oxygen for a period of at least 3 minutes, immediately prior to jumping if their time between 10,000 and 13,000 feet MSL exceeds 30 minutes. Supplemental oxygen will be supplied by an oxygen console provided by the Military Free Fall School.

19.11.1.3. All other parachutists may operate without supplemental oxygen during unpressurized flights up to 13,000 feet MSL provided the time above 10,000 feet MSL does not exceed 30 minutes each sortie. Jumpmasters may operate without supplemental oxygen for an additional 60 minutes within the 10,000-13,000 foot MSL envelope provided their duties do not include jumping. For unpressurized flight above 13,000 feet MSL, or exceeding the 30-minute envelope between 10,000 and 13,000 feet MSL, the use of an individual mask and regulator is required for all jumpers. The user is responsible for all supplemental oxygen requirements. Aircraft equipment will not be used by the parachutists.

19.11.1.4. High Altitude Operational Requirements for Physiology Technicians (PT). PTs will support high altitude airdrop missions IAW AFI 11-409. At least 1 USAF PT is required per 16 personnel on the aircraft, up to a maximum of 3 PTs, for all airdrops conducted at or above 18,000 feet MSL. In addition, consider requesting a PT for long duration airdrops above 13,000' MSL. Additional PTs will be required when PTs need training or a waiver granted to exceed exposure limitations. All CONUS requests for PT support must be made to USAF HAMS current operations desk (DSN 779-6303 / Commercial 618-229-6303). PACAF requests must be made to Kadena AB, JA (DSN 315-634-1967). ***NOTE*:** The USAF High Altitude Airdrop Mission Support Program Manager, 203 West Losey Street, Building 1700, Suite 1600, Scott AFB IL 62225 may authorize variations to the PT-to-personnel ratio.

19.11.2. Prebreathing requirements. All personnel will prebreathe 100 percent oxygen below 10,000 feet pressure altitude or cabin altitude on any mission scheduled for a drop at or above 18,000 feet MSL for times shown in **Table 19.2** Prebreathing will be completed before cabin altitude ascends through 10,000 feet MSL. All personnel will remain on 100 percent oxygen until cabin altitude is below 10,000 feet MSL. A break in prebreathing requires the prebreathing period to be restarted, or the airdrop will be restricted to below 10,000 feet MSL. When prebreathing on the ground is required, a launch crew may assist the primary crew as needed to assure prebreathing requirements are met. Prebreathing will be conducted with a personally fitted oxygen mask attached to a helmet or approved adjustable head harness. Portable oxygen bottles may not be used for prebreathing. ***NOTE:*** Quick don masks are emergency equipment and are not approved for prebreathing or high-altitude airdrop operations.

Table 19.2. High Altitude Operations Prebreathing Requirements and Exposure Limits.

ALTITUDE	AIRCREW	JUMPERS	*Maximum Exposure Time Per Sortie	Maximum Sorties Per 24-Hour Period
From FL 180 to FL 249	30 Min	30 Min	2 Hours	1
From FL 250 to FL 299	45 Min	30 Min HALO 45 Min HAHO	1 Hour	1
From FL 300 to FL 349	60 Min	60 Min	30 Min	1
FL 350 or above	75 Min	75 Min	30 Min	1

NOTE: Maximum Exposure Time Per Sortie is considered to be any time cabin altitude exceeds 10,000 feet MSL. Personnel will conduct no more than two oxygen jumps per 24-hour period that do not require prebreathing (between 13,000 feet and 18,000 feet MSL) one of which, in the same 24 hour period, that requires prebreathing (18,000 feet MSL or above). (Example: Scenario 1: 2 x 17,500 feet MSL or Scenario 2: 1 x 24,999 feet MSL and 1 x 17,500 feet MSL)

19.11.3. High Altitude Emergency Procedures. If a physiological incident occurs, the AC will:

19.11.3.1. Abort the mission.

19.11.3.2. Begin descent (pressurization and descent will be determined by the type and degree of sickness or pain).

19.11.3.3. Ensure the affected person remains on 100 percent oxygen until a medical doctor determines the type of treatment required.

19.11.3.4. Proceed to the nearest base with qualified medical assistance available.

19.11.3.5. Advise the control tower of the emergency and request an ambulance meet the aircraft.

19.11.3.6. Advise attending physician to call Wilford Hall Hospital, Lackland AFB Hyperbaric Medicine (DSN 544-3483, commercial (210)292-3483, after hours (210)292-5990).

19.12. Emergency Parachutist Bailout.

19.12.1. Under satisfactory conditions (static-line exit), the minimum acceptable emergency bailout altitude is 400 feet above the terrain. When an aircraft emergency occurs during static-line airdrops, the PIC maintains an acceptable attitude and altitude for the parachutists to evacuate the aircraft. If the jump must be made at an airspeed in excess of 150 KIAS, advise the parachutists of the airspeed and altitude. Order evacuation by turning on the green light and giving the briefed alarm bell signals.

19.12.2. Minimum emergency bail-out altitude for free-fall parachutists is 2,000 feet AGL.

19.12.3. If conditions are unsuitable for aircraft evacuation, turn the red light on until exit doors are closed. The PIC advises the jumpmaster through the loadmaster to have the parachutists unhook, take their seats, and fasten seatbelts.

19.13. Airdrop Load Information.

19.13.1. Personnel Airdrops.

19.13.1.1. Loadmasters will ensure jumpmasters receive all time advisories, wind updates, and no-drop decisions when passed.

19.13.1.2. Air deflectors must be operational if paratroop doors are used. If an air deflector does not extend, do not open the affected troop door.

19.13.1.3. Loadmasters will not position themselves directly under the center anchor cable supports (A-Frame, LS 937 (FS 737)) in case of anchor cable or support mounting failure.

19.13.2. Combination Airdrops. Restricted to single-ship or the last aircraft of an equipment formation. When tailgating parachutists, the drop altitude is determined by the item requiring the highest drop altitude per AFI 11-231. If an additional pass is required to drop all the personnel after a combination CDS drop, close the ramp and door and re-rig the static-line retriever cable as depicted in TO 1C-130J-9.

19.13.3. Equipment Airdrops. Towplate is the primary method of heavy equipment airdrop. However, crews will be thoroughly familiar with both towplate and non-towplate procedures. Only equipment rigged in accordance with 13-C series T.O.s or JSOC 350 series may be airdropped. The maximum airdrop load to be extracted over the ramp is 42,000 pounds. The aerial delivery unit supporting the load movement ensures current publications are available for loadmaster reference during joint inspections.

19.13.4. CDS Airdrops.

19.13.4.1. Loadmasters are permitted to pull down sharply with a gloved hand or on a nylon strap looped over the static-line retriever winch cable to assist the cut of the release gate. Loadmasters will only pull on the cable after hearing and seeing "GREEN LIGHT‖.

19.13.4.2. Manual CDS gate cuts are authorized for all CDS/I-CDS/JPADS single-stick airdrops (CVR or non-CVR). A manual gate cut is defined as using a knife to cut/release the CDS/intermediate gates. Loadmasters will ensure they hear and see ―GREEN LIGHT‖ before manually cutting the CDS/intermediate release gate. Loadmasters are allowed to go aft of the buffer stop/alternate forward barrier to manually cut the release gate. Exercise caution to remain clear of any bundles in the event of an emergency. Manual gate cuts may be performed with CDS loaded into both sides of the CVR, as long as the bundles are released one stick at a time, and the loadmaster has adequate space to remain clear on the opposite side of the exiting CDS. ***WARNING:*** Double stick CDS released simultaneously will only be cut using the static-line retriever. ***WARNING:*** Loadmaster will not cut release gates while in the paratroop doors next to the exiting CDS.

19.13.5. I-CDS/ JPADS Airdrops. I-CDS and JPADS operations are conducted using the GPS Retransmission kit (GPS-RTK), UHF Dropsonde Receiver Subsystem (UHF-DRS), the JPADS Mission Planner (JPADS-MP) software. I-CDS are normally rigged CDS loads with

non-steerable chutes; JPADS operations are conducted using steerable chutes with autonomous guidance units (AGUs).

19.13.5.1. JPADS certified POs are authorized to use the JPADS mission planner and software to calculate release points for JPADS/I-CDS airdrop operations. The PO will determine a revised CARP using dropsonde data (if required), and will advise the crew of the updated release point. After the JPADS-MP produces the updated CARP it is entered into the Mission Computer. The PM and PO will verify the CARP and all airdrop parameters are entered correctly into the navigation system. For verification, the PO will read the JPADS-MP computed release point coordinates directly from the JPADS-MP while the pilot not flying verifies the same information is in the aircraft navigation system.

19.13.5.2. The PO or mission planner is required to provide JPADS-MP derived CARP(S) for each airdrop pass and a completed Collateral Damage Assessment (CDA) prior to an airdrop mission. Both pilots will review preflight CARP(S)/CDA for each respective airdrop. Use the approved checklist for dropsonde and I-CDS/JPADS airdrops. During the dropsonde release, use of zero flaps at speeds between 170 – 180 KIAS is required to preclude dropsonde tail strikes. Loadmasters should release the dropsondes from the corners of the cargo ramp.

19.13.5.3. Collateral Damage Assessment (CDA). Units must perform a full collateral damage assessment prior to JPADS/ I-CDS airdrops. The CDA must be coordinated and approved by the area controlling agency. Coordinate with the owning agency of the restricted airspace or controlled airspace and landowners with property surrounding the DZ for all JPADS/I-CDS operations. Examine the area in the vicinity of the DZ for potential damage or hazards in the course of normal operations or during extraordinary system failure events. If the CDA demonstrates potential damage or hazards restrict airdrop release LAR, lower the drop altitude, change the run-in, change parachute type or cancel operations. Inform the controlling unit of the risk to their operations; the controlling unit, and the Joint Force Controller (JFC) designated agency are approving authorities for risk to the area surrounding the DZ. Intelligence personnel are responsible for providing the JFC-designated agency close-up and overview imagery to facilitate CDA. For training units are highly encouraged to contact AMC/A3DT (2-3 weeks prior) in order to ensure all planning, coordination and reviews/assessments have been accomplished. Operations conducted at Yuma Proving Ground under JPADS related test plan do not need AMC/A3DT review. See AFI 13-217 for further information. The CDA must include, at a minimum, a review of the airspace and ground space with respect to:

19.13.5.3.1.□□□□□□ CARP and LAR

location. 19.13.5.3.2. 63% 1-sigma I-CDS

success ellipse. 19.13.5.3.3. Chute failure

footprint.

19.13.5.3.4. Guidance failure footprint.

19.13.5.4. IMC/VMC day/night airdrops are authorized for contingency operations. CONUS training operations are required to comply with FAR 105 restrictions. Drops conducted through or originating from IMC are only authorized from within or above an

active restricted area. JPADS parachutes will not be dropped through severe turbulence or severe icing.

19.13.5.5. For I-CDS operations, GPS Figure of Merit (FOM) 3 is required. For JPADS operations, GPS FOM 3 is required.

19.13.5.6. Wind Limits. Wind limitations are unrestricted for dropsonde operations, 18 knots for Firefly, Screamer and Dragonfly and as published in AFI 13-217 for all other parachutes.

19.13.5.7. Drop zone Size. Drop zone size criteria for JPADS and I-CDS drops during contingency operations is at the discretion of the user. AFI 13-217 drop zone size restrictions apply during training.

19.13.5.8. JPADS Guided Footprint Locations. During normal training operations a JPADS DZ, CARP, chute failure footprint and guidance failure footprint will be located within a restricted airspace. If winds force the CARP outside of restricted airspace additional coordination with ATC is required prior to airdrop operations. This includes coordination with the ATC agency, filing a Notices to Airmen (NOTAM), and ensuring airspace is clear for the entire guided system‘s flight profile from the drop altitude to the ground.

19.13.5.9. During normal training operations the entire 1-sigma (63%) I-CDS success footprint will be located within the surveyed DZ boundaries. The chute failure footprint must fall within restricted airspace. If outside of a restricted airspace the chute failure must fall on the surveyed DZ. If operating in a restricted area and winds force the CARP outside of restricted airspace coordination with ATC is required prior to airdrop operations. This includes coordination with the ATC agency, filing a NOTAM and ensuring airspace is clear from the drop altitude to the ground.

19.13.5.10. Jettison of JPADS AGU with Military GPS (MILGPS). Instances of jettison, unauthorized access, tampering, theft, or loss of the JPADS MILGPS enclosure must be reported to the GPS Controlling Authority (CA). Each such report shall include the JPADS MILGPS serial number and Selective Availability/Anti-Spoofing Module (SAASM) GPS serial number of the missing item and must state whether the system was keyed or unkeyed. Product Manager Force Sustainment Systems (PM FSS) will relay such jettison to the GPS CA. ***NOTE:*** Time permitting; the LM with concurrence from the PO will remove the MILGPS enclosure from the AGU prior to load jettison.

19.13.5.11. JPADS AGU MILGPS Procedure. For training missions with Air Force JPADS AGUs aircrew will check out the MILGPS from the unit tactics office. Upon mission completion and prior to removing the MILGPS enclosure, power up the AGU and accomplish the Recovery Mission Duration Zeroization function (if desired). Zeroize prior to removal by pushing, for three seconds, the zeroize button located on the front panel of the MILGPS enclosure. ***NOTE:*** Keying and unkeying requires the MILGPS to be installed in a powered ON AGU. The AGU LCD screen should update within 20 seconds and should read MILGPS Keyed or Unkeyed. Once complete power OFF the AGU. The PO will remove and return the enclosure to the Unit‘s Tactics Office.

Chapter 20

AEROMEDICAL EVACUATION

20.1. Mission.

20.1.1. This chapter applies to Air Force C-130J Aircrews, AE Aircrews and all management levels concerned with operations of the C-130J aircraft. All operators involved in AE missions on C-130J aircraft will use this AFI.

20.1.2. C-130J aircraft may be used for AE transport of ill or injured DOD members and their dependents. These AE missions may be directed at any time by C2 agencies. AE personnel will utilize the procedures in applicable AFI 11-2AE-V3 and 41-307 series, in conjunction with this publication, to accomplish the AE 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 of AE missions is the same as other airlift missions.

20.2.3. The PIC is 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, his/her decisions are final (see AFI 11-2MDS-specific V3 for a more detailed list of PIC responsibilities). In matters of patient care, decisions of the MCD 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. He/she advises the PIC on patients‘ conditions 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 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.

20.2.6. The Aeromedical Evacuation Operations Officer (AEOO), if available, who acts as a liaison between the AE crew and ground support facilities. When available, the AEOO is responsible for coordinating the launch and recovery of the AE mission

20.3. Alerting Procedures.

20.3.1. At all locations AMC C2 agency will alert the PIC/MCD. The MCD will alert the medical crew. The goal is to link the primary PIC, local AMC C2 agency and MCD before mission execution.

20.3.2. When the AE crew is staged separate from the front-end crew, the MCD will contact AMC local C2 agency and establish alert, showtime, etc. with the C2 agency. The MCD will make every effort to communicate with the front-end crew any mission irregularities prior to crew rest. Utilize local AMC C2 agency to leave messages for non-emergency. Crew rest will be based on scheduled launch time. Do not violate crew rest.

20.3.3. The local AMC C2 agency will provide AC/MCD AE mission information when he/she checks on mission status. Local C2 agency will be the link between the AE crews and the PIC, thus permitting mission status updates to both parties without interruption of crew rest.

20.3.4. AE mission requirements can change depending on clinical status of patient(s) and aircraft availability. There will be occasions when aircraft cannot depart (i.e. MX problems) or emergency patient movement that may separate an AE crew from the front-end crew. The MCD is responsible for communicating these changes with the PIC and local AMC C2 agency to de-conflict problems.

20.4. Pilot in Command Responsibilities.

20.4.1. Establish communications link with the MCD during pre-mission planning and throughout the mission.

20.4.2. Brief AE crew on the mission, flight plan, flight profile, and current threat (as applicable). Identify armed crewmembers (as required).

20.4.3. The PIC will fully integrate front-end and Aeromedical Evacuation Crew Members (AECM) into single crew throughout 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. When the sortie is being flight managed, coordinate flight restrictions with the FM if the FM provided plan needs to be modified.

20.4.5. For missions with combined cargo and patients, coordinate with the MCD for loading, positioning, and egress considerations.

20.4.6. Comply with hazardous cargo/passenger restrictions in AFI 24-101.

20.4.7. Advise AECMs of intentions to start engines, taxi, itinerary changes, in-flight difficulties, and additional responsibilities of the flight crew.

20.4.8. Transmit load messages and radio transmissions to tasking AE C2 agency as requested by the MCD.

20.4.9. Brief the MCD on additional responsibilities of the flight crew.

20.5. Loadmaster Responsibilities.

20.5.1. Assist the AE crew with aircraft systems.

20.5.2. Coordinate emergency evacuation plan with the MCD.

20.5.3. Operate aircraft systems, i.e., doors, ramps, emergency exits, etc.

20.5.4. Assist the AE crew as necessary, providing such assistance does not interfere with primary duties.

20.5.5. Operate galley and prepare food and beverages for food service provided to patients by AECMs.

20.5.6. Assist with aircraft configuration for AE operations.

20.5.7. Coordinate vehicle movement/enplaning/deplaning/ERO requirements with the Charge Medical Technician (CMT).

20.6. Aeromedical Evacuation Crew Responsibilities.

20.6.1. Responsible for patient clinical care activities including loading, positioning, and off-loading.

20.6.2. Assist Loadmaster/maintenance crew with aircraft configuration for AE operations.

20.6.3. Install and remove medical equipment/supplies.

20.6.4. The MCD or designated AECM should monitor interphone (headset) during flight. The MCD will be on headset with the PIC during critical phases of flight and during in-flight emergencies.

20.6.5. The CMT is responsible for all ground operations involved with patients. The CMT, in coordination with the LM, is responsible for vehicle movement/positioning around the aircraft.

20.7. Ground Operations.

20.7.1. Engines should be shut down during enplaning and deplaning of patients. ***Exception***: ERO procedures as outlined in 20.14.

20.8. Refueling Operations.

20.8.1. Refueling normally begins after deplaning patients are off the aircraft and prior to enplaning that station's patients. The PIC and CSS shall ensure aircrew members and servicing personnel accomplish CS per AFI 32-2001 and TO 00-25-172.

20.8.2. Concurrent servicing may be accomplished with patients onboard provided:

20.8.2.1. The CSS coordinates with all personnel involved prior to beginning concurrent operations.

20.8.2.2. Prior to starting concurrent servicing, the total number of patients, passengers, and crew on board the aircraft will be given to the fire department.

20.8.2.3. Loading ramps/stairs are in place for immediate use and exits (excluding the overhead escape hatches) are opened for egress.

20.8.2.4. The aircraft is thoroughly ventilated.

20.8.2.5. At least two AECMs (one must be a FN) remain onboard to observe and assist patients in the event of an egress.

20.8.3. If cabin lights, lavatories, electrical power to operate medical equipment and aircraft inter-phone are operating prior to refueling, use may be continued during servicing operations. Only those systems, switches or electrical circuits needed to operate equipment to sustain life, may be turned on and used during refueling.

20.8.4. Patients and passengers will not enter or exit the aircraft during servicing. Crewmembers may enter or exit the aircraft only when performing essential duties associated with the concurrent servicing operation.

20.8.5. Activities around the aircraft will be kept to a minimum during the refueling process. On-load/off-load patient and passenger baggage prior to or after refueling.

20.8.6. Do not use the on board toilet facilities during servicing.

20.8.7. When the aircrew is at the aircraft, the PIC is responsible for all aspects of aircraft operations and shall inform the CSS how aircrew members will participate in passenger evacuation/safety.

20.9. Aircraft Configuration.

20.9.1. On designated ARM and operational AE missions, configure the aircraft during pre-flight per TO 1C-130J-9.

20.9.2. Litter Support Provisions.

20.9.2.1. Roller conveyers will be stowed, unless required for comfort/baggage pallets. Rollers on the ramp will be stowed during patient on-loading or off-loading operations.

20.9.2.2. Litter patients will be enplaned feet first and deplaned head first due to minimal degree of ramp incline. This eliminates the need to turn litter patients around on the cargo ramp prior to placing them in the litter tier.

20.9.2.3. A five (5) high configuration using the center seat and litter stanchions is approved for all AE missions.

20.9.2.4. The seat and litter stanchion ladder will be installed for all AE missions when cargo requirements permit.

20.9.2.5. Litter support straps will be secured to the aircraft floor prior to take-off. If litters are not in the tier, loose litter support straps will be secured in a top and bottom litter support bracket on the center seat and litter stanchion. This will remove a free-swinging strap hazard.

20.9.3. Available litter spaces and ambulatory seating will depend on the aircraft cabin‘s mission configuration.

20.9.4. Therapeutic Oxygen. Therapeutic oxygen is not an integral system on the C-130J aircraft. Use the PTLOX system.

20.9.5. Integral patient/passenger emergency oxygen is not available on the aircraft. In the event of an emergency, patients and passengers will use the Emergency Passenger Oxygen System (EPOS).

20.9.6. AECMs will have portable oxygen available. AECMs normally use an MA-1 portable oxygen bottle. If MA-1 bottles are not available, PBE‘s may be used as portable oxygen. ***NOTE***: If a pressure demand regulator is used, the oxygen supply will be turned ―off‖ when the personal oxygen equipment is removed.

20.9.7. Do not secure aircraft or medical equipment adjacent to an emergency exit in a manner that will prevent or impede egress.

20.9.8. Life Preservers. Use the Adult/Child life preserver for patients.

20.10. Passengers and Cargo.

20.10.1. The PIC, with the concurrence of the MCD, will ensure maximum aircraft utilization for passengers and cargo. 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. Cargo and passengers may be carried with patients unless a clear detriment to the health and well being of the patient or passengers can be demonstrated. The decision will be made by the MCD, considering the need for maximum utilization of the aircraft. Conflicts will be referred to the respective tasking AE command element for a decision. Litter patients will be positioned forward of cargo pallets. ***Exception***: If cargo is in place, and the PIC and MCD agree, patients may be transported aft of the cargo. The MCD and Loadmaster will ensure patient egress is not affected by mixed cargo/patient loads.

20.10.3. Cargo will not be bumped except in unusual/abnormal cases, and only after the MCD has coordinated with the PIC and notified the tasking AE command element.

20.10.4. Do not move ambulatory patients to litters in order to provide seating for additional patients or passengers.

20.10.5. For patient comfort and to permit in-flight rest for patients use the following for missions over 4 hours in duration:

20.10.5.1. Minimum of 2 litters should be available for ambulatory patients.

20.10.5.2. One seat must be reserved for every 3 litter patients.

20.10.6. An emergency litter will be set up on all AE missions.

20.10.7. Patient Therapeutic Liquid Oxygen (PT LOX) may be transported for positioning and depositioning of operational/contingency support AE Missions.

20.10.8. A maximum of 25 PTLOX serviced units may be transported simultaneously without Hazmat certification. Processing through aerial port is not required. If shipping more than six PTLOX containers as cargo, do not cover with plastic. This will prevent potential high concentration of oxygen levels. ***WARNING*:** Ensure the cargo floor is free from any oil or petroleum products.

20.10.9. Hazardous cargo will not normally be transported aboard AE missions.

20.10.10. AE Movement of Contaminated/Contagious Personnel. It is United States Transportation Command (USTRANSCOM) policy that patients personnel, or casualties with known or suspected contamination from chemical, biological, or nuclear warfare agents will not be transported within the aeromedical patient movement system. Decontamination must be performed prior to transport to prevent the potential spread of contamination. In rare cases, transport may be essential to preserve life or continue critical missions. If such transport is deemed essential, all efforts must be made to prevent the spread of contamination. In these cases, prior approval must be given by the involved geographic combatant commanders, Commander USTRANSCOM, and the Secretary of Defense (SECDEF) in consultation with Department of Defense medical authorities.

20.10.10.1. Patients with known or suspected or highly contagious disease will not be transported within the patient movement system. These include infections with any agent that may pose a potential threat to national security, require special public health actions,

and/or have the potential to cause public panic and social disruption. Patients known or suspected to be infected with a highly contagious disease should be treated ―in place‖ or with minimal transportation to medical authorities. In extreme circumstances there may be a requirement to move index cases (approximately two) for evaluation or critical medical care. If patient movement is required, prior approval must be given by the involved geographic combatant commanders, Commander USTRANSCOM, and SECDEF in consultation with medical authorities.

20.10.10.2. AMC will train and equip AE crews and stage required equipment at key hubs to carry out these limited missions for movement of contaminated and contagious patients. ***NOTE:*** If AECMs are utilizing the MCU-2A ground chemical mask, a FL below 10,000 feet is recommended due to reported valve failure during rapid decompression.

20.11. Crash/Fire/Rescue.

20.11.1. Aircraft carrying patient(s) will be provided CFR protection per T.O. 00-25-172. When concurrent fuel servicing with patients/passengers on board a major aircraft rescue and fire vehicle will be available to respond within three minutes or as determined by the base Fire Chief. ***NOTE***: When servicing with JP-4 or Jet B Fuel, a major aircraft rescue and fire vehicle will be positioned at the aircraft.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 the CFR coverage, as necessary. The request for CFR vehicle coverage may be denied. This will not prevent refueling operations from occurring.

20.12. AE Call Sign/Use of Priority Clearance.

20.12.1. AIR EVAC Priority. If a medical emergency occurs during flight, and is determined by the MCD to be an urgent situation, a request for AIR EVAC Priority will be requested. The PIC may request ―AIR EVAC priority‖ for preferential ATC handling if a delay will affect a patient‘s well being. AIR EVAC priority will only be used for that portion of the flight requiring expedited handling. Do not request priority for routine air evacuations to avoid ATC delays or inconveniences. It is the PIC‘s responsibility to use this option only for bona fide medical situations that demand priority handling. Use this status judiciously.

20.13. Load Message.

20.13.1. The MCD will complete an AF Form 3858, C-130/C-141 Aeromedical Evacuation Mission Offload Message and coordinate for transmission of patient information to C2 with the ―30 minutes out call‖.

20.14. ERO Procedures.

20.14.1. ERO procedures are outlined in AFI 11-2AE Volume 3. ERO procedures (including use of Hotel mode) for loading patients are authorized for contingency operations or when AE mission requirements dictate minimum ground time. ERO procedures (including the use of Hotel mode) can be practiced/trained during ARMs, static trainers, joint training operations, exercises, etc. EROs will not be used in a non-contingency environment unless mission essential.

20.14.2. The loadmaster will be positioned on the left side, at the foot of the ramp and on headset during actual on-load procedures.

20.14.3. When litter patients are wearing personal gear (i.e. web belts, canteen, helmets, flak vests, etc.), consider loading four (4) high versus five (5) high in the center seat and litter stanchions, to increase space between litters to accommodate gear. If situation requires/permits, remove personal gear from patients and secure on ramp or in a designated area.

20.15. Floor Loading Procedures.

20.15.1. Floor loading of patients is authorized for all contingency operations when a time critical environment exists (i.e. non-secure landing zones, areas faced with enemy siege/hostile fire, humanitarian reasons, etc.), and minimum ground time is essential. Floor loading procedures can be practiced/trained during aeromedical readiness missions (ARMs), joint training operations, exercises, etc. The cargo/ramp floor will be configured with all rollers stowed (cargo permitting). Maximum altitude for floor loaded patients is FL 350. Patients will have an EPOS pre-positioned on their litter when floor loaded.

20.15.1.1. Ambulatory Patients. If available, any cushioning material may be used for seating, to prevent the patient from having to sit on the cargo floor. Seat ambulatory patients so they face forward in the aircraft. Attach a cargo tie-down strap for each row of patients, in a manner that it will provide forward restraint and body stability. See TO 1C-130J-9 for proper use of the tie down device.

20.15.1.2. Litter Patients. Two crewmembers are required to work simultaneously in securing the opposite sides of the litters to the floor (applies when securing two or three litters together). Position litters side-by-side and longitudinally on the cargo area floor, with the patient‘s head toward the aft of the aircraft. A maximum of 15 litters, comprised of five rows of three litters, can be floor loaded. Medical equipment can be secured on a litter(s) in the ―I‖ or ―L‖ sidewall litter tier or on the ramp. Secure the litters to the aircraft floor using the following procedures. (See **Figure 3.1**).

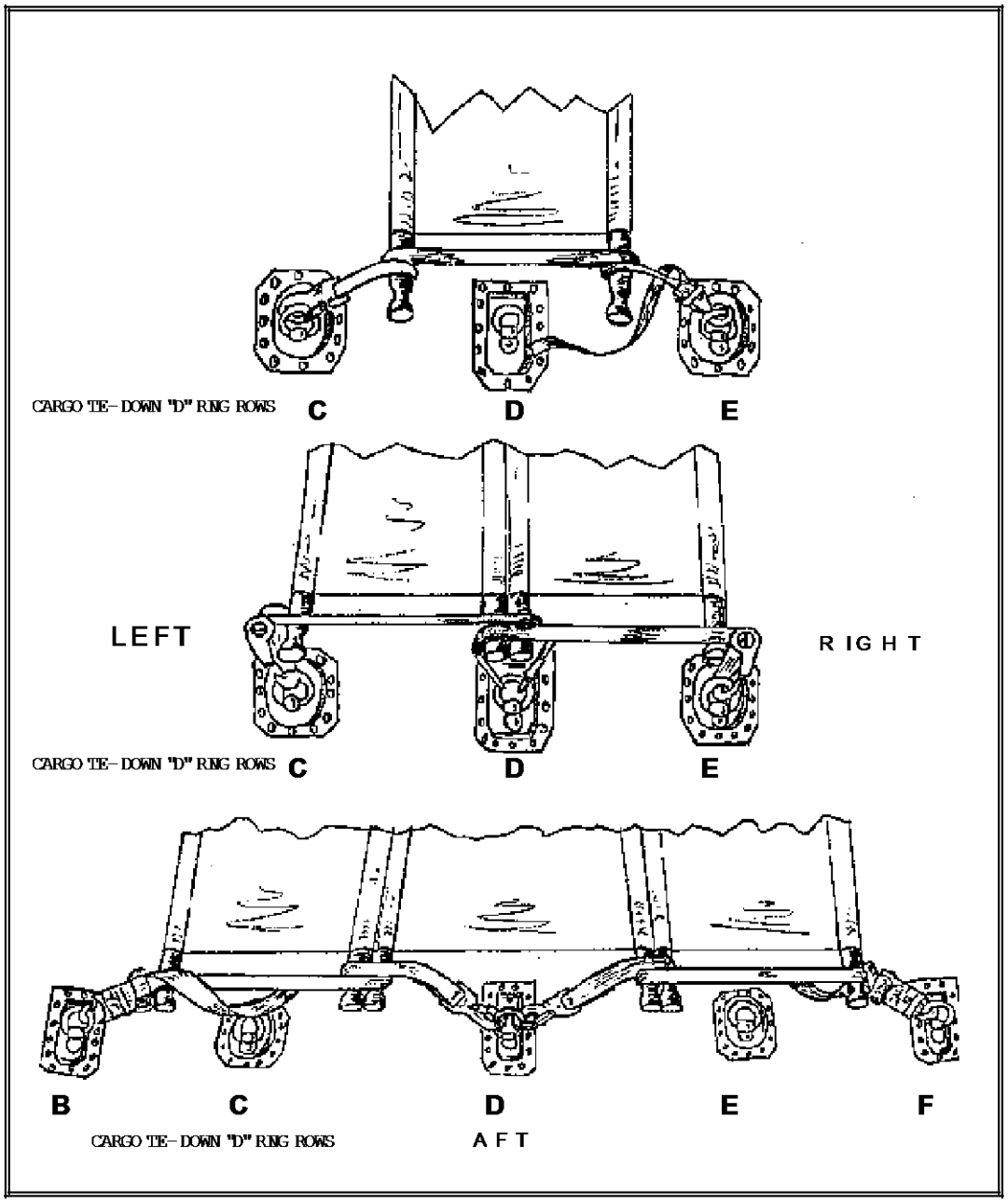
20.15.1.2.1.□□□□□□ One litter: Center litter over ―D‖ column. Use one tie-down device at each end of the litter. Connect clamp end of device to a tie-down ring in the ―C‖ column, and run strap webbing over the litter handles, wrapping once around each handle. Attach the hook on the ratchet end of the tie-down device to the tie-down ring in the ―E‖ column on the other side of the litter. Remove slack from strap webbing, and ratchet the tightening device (see TO 1C-130J-9 for proper use of the tie-down device). Repeat process at other end of litter. Ensure ratchets have 1½ turns.

20.15.1.2.2.□□□□□□ Two litters: Place litters side-by-side, and align inboard litter handles over ―D‖ column. Use two tie-down devices at each end of the litters. Connect clamp end of tie-down devices to tie-down ring in ―D‖ column, and run strap webbing over both inboard handles, then over respective outboard handle. Do not wrap strap webbing around any handles. Attach the hook on the ratchet end of the tie-down devices to the tie-down ring in ―C‖ or ―E‖ column (as applicable). Remove slack from strap webbing, and ratchet the tightening device. Repeat process at other end of litter. Ensure ratchets have 1½ turns.

20.15.1.2.3.□□□□□□ Three litters: Place litters side-by-side and center inboard litter over ―D‖ column. Use two tie-down devices at each end of the litters. Connect clamp end of

tie-down devices to tie-down ring in ―D‖ column, and wrap strap webbing once around applicable paired litter handles, then over respective outboard handle. Do not wrap strap webbing around outboard handles. Attach the hook on the ratchet end of the tie-down devices to the tie-down ring in ―B‖ or ―F‖ column (as applicable). Remove slack from strap webbing, and ratchet the tightening device. Repeat process at other end of litter. Ensure ratchets have 1½ turns. ***NOTE*:** Due to forward pallet stop bumper locations, litter handles may have to be secured forward of the litter stanchions mounted at the forward bulkhead.

Figure 20.1. Floor Loading Litters.



Chapter 21

EMERGENCY NUCLEAR AIRLIFT (ENAF)

21.1. General. The objective is to move nuclear weapons safely. You may be tasked at any time to airlift nuclear weapons. The amount of preparation time and degree of assistance you receive will depend on the length of time the MAJCOM has to move the weapons.

21.2. Conduct of Operations. Crews should be briefed and receive detailed instructions from a specific OPLAN or mission directive. If there is a conflict between this instruction and the requirements in an OPLAN or mission directive, use the OPLAN or mission directive.

21.3. Emergency Nuclear Airlift Standards. Crews are expected to use sound judgment and common sense in what may be a turbulent or tense environment. Pay particular attention to the following areas:

21.3.1. Nuclear weapons must be handled safely. The most immediate hazard is the high explosive that can be set off by shock or heat in most nuclear weapons. Keep loading operations controlled and orderly at all times. Load or handle only one item or pallet at a time. Crews may ask shipper or receiver personnel to help, but the overall aircraft loading responsibility still belongs to the aircrew.

21.3.2. Use standard TO 1C-130J-9 loading procedures.

21.3.2.1. For mixed loads (more than one type of weapon), base the load plan on how many weapons can be properly restrained using TO 1C-130J-9 criteria. Do not allow weapons to rub or touch each other when tied down.

21.3.3. The route of flight must not violate restrictions in the classified United States Air Force Special Weapons Over-flight Guide (SWOG). Over-flight of a foreign country with nuclear weapons is an extremely sensitive issue. Comply with SWOG instructions at all times. Crews without access to the SWOG will request a route of flight that complies with the SWOG through command and control center (C2 agency) channels, 618 TACC/X000N (DSN 779-4584). The C2 agency must ensure the route of flight is provided to the aircrew by the most expeditious means available. If no route of flight is provided, fly normal ATC routings to the destination. Do not divulge the nature of cargo to any enroute ATC facility or country to obtain a specific clearance.

21.3.4. United States military custody of nuclear weapons is required. Normally, the copilot is the courier who has custody of the nuclear cargo for the flight. Under certain conditions, the shipper may furnish United States military couriers who will retain custody of the weapons in flight.

21.4. Aircrew Selection. All active duty C-130J aircrews may be used for ENAF. Time permitting, AMC will use a sliding scale of options, which may be one or more of the following:

21.4.1. Use non-PNAF crews in a prepared OPLAN scenario with planned, organized loads.

21.4.2. Use non-PNAF crews in a short notice, bare-base environment with little or no advance preparation or assistance.

21.5. Aircrew Requirements.

21.5.1. Crew complement will be according to the OPLAN or specific mission directive. If not specified, use a normal crew complement.

21.5.2. The crew will be armed (courier and two additional crewmembers).

21.5.3. Crewmembers tasked for a mission that has a higher security classification than their personnel security clearance will be authorized emergency access to enough information to complete the mission. Approval authority rests with a general officer, wing commander, or wing commander equivalent and cannot be delegated.

21.6. Aircrew Briefings.

21.6.1. Crews should be briefed on the following:

21.6.1.1. Purpose of the mission.

21.6.1.2. Classification of the mission, cargo, and locations.

21.6.1.3. Itinerary, including confirmation of prior coordination for hazardous material as required by IFR supplement and alternate airfields.

21.6.1.4. Cargo. TO 11N-20-11 line numbers should be included. Obtain line numbers from the fire department prior to loading. TO 11N-20-11 is a classified technical order that assigns an unclassified line number to each nuclear weapon.

21.6.1.5. ―No lone zone,‖ two-person concept, and security requirements.

21.6.1.6. Personnel authorized to sign for nuclear weapons at the destination.

21.6.1.7. Current intelligence, including threat analysis.

21.6.1.8. SWOG route of flight restrictions.

21.6.1.9. Airborne intercept (SWOG).

21.6.1.10. Jettisoning (SWOG).

21.6.1.11. Command Disable System (CDS) procedures.

21.6.1.12. The PIC will ensure emergency procedures in paragraph **21.10** below are briefed

21.7. Enroute Procedures. Use these procedures in addition to the normal operating procedures in the rest of this regulation.

21.7.1. Flight Plans. Enter ―hazardous cargo‖ and the mission number in the ―other information‖ section of the flight plan. Crews carrying inert weapons, trainers, or other items that could be mistaken for real weapons by crash or rescue personnel in an emergency will enter ―inert devices.‖

21.7.2. Radio Calls:

21.7.2.1. Departure (on-load) base. Before starting the on-load, tell the tower to notify the fire department the ―on-load is commencing.‖ Prior to engine start, give the controlling agency (ground or tower) the parking location and approximate engine start time and announce there is hazardous cargo aboard the aircraft. Ensure a fire truck is standing by the aircraft for engine start.

21.7.2.2. Enroute or offload base. At least 30 minutes prior to landing, contact one of the following: command post, base operations, or control tower. Pass mission number and verify that the hazardous cargo information has been received. If the arrival base does not have hazardous cargo information, request the following be relayed immediately to the crash or fire protection agency and other support agencies as appropriate:

21.7.2.2.1. Aircraft call sign, type, and mission number.

21.7.2.2.2. ETA.

21.7.2.2.3. Department of Transportation (DOT) explosives hazard class or division (normally 1.1).

21.7.2.2.4. Net explosive weight (NEW).

21.7.2.2.5. Line numbers from TO 11N-20-11 if requested. Obtain line numbers from the base fire department prior to starting the load at the on-load location.

21.7.2.2.6. A request for isolated parking and security forces to meet the aircraft.

21.8. Custody of Nuclear Cargo. The courier must be a commissioned officer. A copilot is the preferred option. The courier officer is responsible for receipt, custody, security, safety, and delivery of nuclear weapons to authorized receivers.

21.8.1. Prior to accepting and loading nuclear weapons, the shipper briefs the crew (at least the PIC, courier officer, and primary loadmaster) on the nature and hazards of the cargo. PICs will brief crewmembers who didn‘t receive the shipper‘s briefing prior to flight. Ask the shipper to point out any specifics crews may need to handle the weapon, i.e. tiedown points, forklift stirrups, CDS procedures, etc.

21.8.2. Time permitting, the courier and loadmaster will inspect the cargo before accepting custody. The courier should have the shipper verify the integrity of a weapons case and replace any broken seals. Crews may be held responsible for damage at the receiving end if crews accept a damaged weapon without documentation. Document damage or broken seals on the DD 1911, **Materiel Courier Receipt**, prior to signing for the weapon.

21.8.2.1. Loadmasters will inspect weapons to ensure they are secured to carriers, conditions of tiedown rings, and condition of wheel casters etc.

21.8.3. The courier accepts custody of the weapon by signing the DD 1911 provided by the shipper. Use this form to transfer cargo custody to replacement couriers.

21.8.4. Release custody of the cargo only to a replacement courier or someone authorized to sign for nuclear material. Authorized receivers are identified by the shipper, by message, or through the AMC command and control system.

21.8.5. Time permitting, refer any questions through the 618 TACC Command Center to 618 TACC/XOOOD DSN 779-4584 for resolution.

21.9. Security Procedures. The host base is responsible for providing security for the aircraft and the nuclear cargo. The courier officer (who has custody of the weapons) is the final authority on security matters; however, crews should follow the advice and procedures of the host security force as much as possible. If the situation is serious and crews must load and depart quickly, use judgment and dispense with the formalities. Prior to takeoff, the PIC will

ensure security support at all stations being transited that day through the 618 TACC Command Center.

21.9.1. Home Station. Conduct a thorough visual search of the aircraft for unauthorized explosives or stowaways. Use a bomb detection dog if available. If time is critical, do not delay the mission to ―sanitize‖ the aircraft.

21.9.2. On-load Base. The host base should set up a restricted area, normally with ropes and stanchions, around the aircraft.

21.9.2.1. Entry Control. Use one entry point to maintain strict control of entry into the area. The entry controller will have a roster of all personnel allowed to enter. Use a copy of the flight orders for the aircrew. Instruct the entry controller to coordinate with the aircrew courier before allowing anyone into the area. ***EXCEPTION:*** Allow the weapons convoy to enter the restricted area without delay.

21.9.2.2. ―No lone zone.‖ Do not allow anyone to be alone in the restricted area or aircraft when nuclear weapons are present (inside either the area or the aircraft). The purpose of a ―no lone zone‖ is to prevent any one person from tampering with a nuclear weapon. The easiest way to enforce a ―no lone zone‖ is to always be in pairs inside the restricted area (for example, two aircrew members, two shippers, or one aircrew member and one shipper). Maintain the two-person concept throughout the flight. Do not allow anyone to be alone in the cargo compartment or the flight deck..

21.9.3. Arrival or Enroute Base. Prior to engine shut down, deploy sufficient armed crewmembers around the aircraft to control access to the aircraft until the host base security force is established. Keep doors closed and be prepared for an immediate departure until the host base established security. Once security is established, the only personnel authorized near the aircraft are aircrew members and those support personnel necessary to install landing gear pins, ground power, and wheel chocks. Monitor these people at all times.

21.10. Emergency Procedures.

21.10.1. Security Emergencies. Crews may use deadly force to protect nuclear cargo and will resist any attempt by a hostile force to capture a nuclear weapon. Consider any attack on an aircraft loaded with nuclear cargo, including a hijacking attempt, as an attack against the nuclear weapons. Should hostages be used to gain access to, as cover for removal, or to thwart recovery of a nuclear weapon; the welfare and safety of the hostages should be considered in determining actions to be taken. However, the presence of hostages shall not deter the taking of decisive, prompt, and effective action that includes the use of deadly force to recover a nuclear weapon and to prevent unauthorized access to or removal of a nuclear weapon. If crews are attacked, take the following actions:

21.10.1.1. Make an immediate takeoff, with the cargo if possible.

21.10.1.2. If the attack occurs during on-loading or off-loading, load the weapons as fast and as safely as possible. Ensure sufficient cargo restraint and take off immediately.

21.10.1.3. Some weapons are equipped with a CDS that internally destroys the capability of a weapon to achieve a significant nuclear yield. The CDS will be used when capture of a weapon is imminent.

21.10.1.4. Aircrews will not use emergency destruct procedures on nuclear weapons. Emergency destruction (ED) of weapons by shaped charges requires SECDEF approval and will be accomplished by qualified personnel who have the capability to receive, authenticate, and carry out ED orders. When two properly identified shipper or receiver personnel concurrently request custody of the cargo for ED purposes, release the cargo using appropriate custody transfer procedures.

21.10.2. Jettisoning Nuclear Cargo. The loadmaster will identify which cargo is jettisonable IAW the dash-1. The PIC bears a moral obligation to jettison cargo or crash-land where the least amount of damage will result. Use the CDS, if applicable, prior to jettisoning or crash-landing. Record the coordinates of each jettisoned item. Observe the jettison restrictions in the SWOG.

21.10.3. Landing in Foreign Countries. Be prudent and keep things very low key. If confronted with demands to board or inspect the aircraft, refer to the status of US military aircraft in the FCG which states: US military aircraft are sovereign instrumentalities. US military aircraft cleared to overfly or land in a foreign territory are entitled to the privileges and immunities customarily accorded to warships. These privileges and immunities include, in the absence of stipulations to the contrary, exemption from duties and taxation; immunity from search, seizure, and inspections (including customs and safety inspection); or other exercise or jurisdiction by the host nation over the aircraft, personnel, equipment, or cargo on board. Air Force PICs will not authorize search, seizure, inspection, or similar exercises of jurisdiction enumerated above by foreign authorities except by direction of HQ USAF or the American Embassy in the country concerned. Diplomatically, but firmly, refuse any requests to board or inspect, and get help through any available United States channel. Flash priority is authorized.

21.11. Maintenance on Aircraft Loaded with Nuclear Cargo.

21.11.1. Maintenance on an aircraft loaded with nuclear weapons must not violate safety rules normally used with aircraft loaded with conventional explosives. As much as possible, have maintenance and servicing completed before loading nuclear weapons on the aircraft. Do not allow maintenance, such as the following, that could increase the possibility of a fire:

21.11.1.1. Using flame or uncontrolled heat-producing items.

21.11.1.2. Repairs on the fuel system, cell, and tank or other maintenance where significant fuel spills are likely to result from disconnected lines, ruptured components, etc.

21.11.2. Aircraft will not be jacked. The temporary lifting of one set of landing gear for minor maintenance (tire change, brake change, etc.) is not considered jacking.

21.11.3. Do not refuel, defuel, or service oxygen while loading or offloading nuclear weapons. Have a fire truck standing by at the aircraft during refueling, defueling, or oxygen servicing.

21.11.4. If a crew chief is not available the loadmaster or pilot will monitor all maintenance on the aircraft while nuclear cargo is on board.

21.12. Emergency Nuclear Airlift Operations Guide. This guide describes recommended actions for courier and crew during emergency nuclear airlift operations. It is designed for those

missions diverted enroute to an on-load site where the crew does not have the opportunity to receive a formal CRG, home station, or command post briefing. However, even if a formal briefing is given, this guide may be used as a refresher. Security, time, and ground support may not be sufficient to allow using this guide during emergency operations. In such cases, the courier and crew must discuss all factors and use their judgment on the best course of action to accomplish the mission. Safety and security is paramount in all decisions affecting transportation of nuclear cargo.

21.13. Prior to On-load. Accomplish the following, either at home station or enroute to the on-load site:

21.13.1. Review crew responsibilities and the procedures to be used during onload (loading method, security setup, cargo receipt, two-person concept). Do not discuss classified information over interphone.

21.13.2. Enroute and 30 minutes prior to landing, contact the on-load site and notify them of ETA. Make support requirements known (fuel, materials handling equipment (MHE), transportation, security, etc.) at this time.

21.14. Arrival and On-load.

21.14.1. Contact the senior security official and comply with the following: If crews have nuclear cargo on board, establish a restricted area and keep everyone off the aircraft. Provide armed security until the host security forces assume responsibility.

21.14.1.1. A restricted area will be established around the aircraft. Ropes and stanchions are normally used to denote the restricted area. However, depending on the situation, crews may see additional guards, security vehicles, etc., rather than ropes. Be flexible. The key is whether the host base is furnishing enough security to protect the nuclear cargo.

21.14.1.2. A single entry control point will be established.

21.14.2. The entry controller must allow only those individuals into the restricted area who have been cleared by the courier. Tell the entry controller which individuals are authorized into the area and, time permitting, use crew orders as an EAL and prepared shipper lists.

21.14.3. After security is established, verify shipper identification and accomplish the following with the shipper:

21.14.3.1. Shipper briefing to include the following:

21.14.3.1.1.□□□□□□ Nature, hazard, and safety regarding shipment of nuclear weapons cargo, including line numbers from TO 11N-20-11, DOD class explosive hazard class or division, and net explosive weight (NEW).

21.14.3.1.2.□□□□□□ Courier escort

requirements. 21.14.3.1.3. Items requiring the two-

person concept.

21.14.3.1.4.□□□□□□ Items that are CDS equipped and if the CDS has been activated (weapon not operational).

21.14.3.1.5.□□□□□□ Items exposed to an abnormal environment or not operational.

21.14.3.1.6.□□□□□□ Special handling or unique requirements particular to the cargo.

21.14.3.1.7.□□□□□□ Individuals required to assist during onload or off-load. Pass the information to the entry controller.

21.14.3.1.8.□□□□□□ Authorized recipients at offload station. Get this information in writing. ***NOTE:*** If the primary loadmaster and the PIC were not present for the shipper briefing, the courier must brief them on the applicable items.

21.14.3.2. Cargo inspection:

21.14.3.2.1.□□□□□□ The primary loadmaster, courier, and shipper will inspect the cargo for broken seals, exterior damage, security to carrier, wheel and casters, tiedown points, etc. Have the shipper annotate any discovered damage or discrepancies on the DD 1911. ***NOTE:*** Ensure the aircraft is ready for on-load prior to accepting custody of nuclear cargo.

21.14.3.2.2.□□□□□□ After the inspection, accept custody of the cargo by signing the DD 1911.

21.14.4. During onload or off-load monitor the operation, assist as necessary, and ensure personnel comply with the two-person concept.

21.14.5. After cargo on-load is complete and the crew is ready for engine start, the armed courier will deplane and tell the host base security to break down security and maintain surveillance until aircraft departure. The courier and other armed crewmembers will monitor access to the aircraft and crew entrance door during engine start.

21.15. Enroute to Offload.

21.15.1. . Maintain the two-person concept.

21.15.2. Notify the 618 TACC Command Center of departure time and ETA at the offload station. Be prepared to encode this information.

21.15.3. If time permits, review the security and handling procedures to be used at the offload station. Do not discuss classified information over the interphone.

21.15.4. Contact the agency specified in flight information publications (command post, base operations, or tower) 30 minutes prior to landing; ask if they have hazardous cargo information. If they don‘t, pass the following information:

21.15.4.1. Call sign, type aircraft, and mission number.

21.15.4.2. ETA.

21.15.4.3. Line numbers from TO 11N-20-11 or DD 1911.

21.15.4.4. If line numbers were not provided, pass on the following information:

21.15.4.4.1. DOD explosive hazard class or division (normally 1.1).

21.15.4.4.2. NEW.

21.15.4.5. A request for isolated parking and for their security forces to meet the aircraft.

21.15.4.6. Inert devices, if applicable.

21.16. Off-load.

21.16.1. Upon arrival, deploy the armed courier (minimum) and team (if required) to provide security until the host security forces assume responsibility and establish the restricted area. Keep all doors closed and engines running until security is established.

21.16.2. Maintain the two-person concept.

21.16.3. Brief the receiver on the cargo, and transfer custody.

21.16.4. Briefing includes:

21.16.4.1. Nature, hazard, and safety regarding shipment of the nuclear weapon cargo, including line numbers from TO 11N-20-11, DOT explosive hazard class or division, DOT class, and NEW.

21.16.4.2. Courier escort requirements.

21.16.4.3. Items requiring the two-person concept.

21.16.4.4. Items that are CDS-equipped and if the CDS has been activated (weapon not operational).

21.16.4.5. Items exposed to an abnormal environment or not operational.

21.16.4.6. Special handling or unique requirements applicable to the cargo.

21.16.4.7. Individuals required to assist during the offload. Pass this information to the entry controller.

21.16.5. The receiver and courier will conduct an inspection of the cargo for broken seals, exterior damage, etc. If discrepancies are found and they have not been previously noted, the courier will annotate them on the DD 1911.

21.16.6. Transfer custody of cargo. (Receiver signs DD 1911).

21.16.7. Complete offload of cargo.

21.17. Forms Adopted. AF Form 4076, *Aircraft Dash 21 Equipment Inventory*, AMC FORM 41, *Flight Authorization*, AMC FORM 43, *AMC Transient Aircrew Comments*, AMC FORM 54, *Aircraft Commander's Report on Services/Facilities*, AMC Form 148, *Boarding Pass*, AMC FORM 196, *Aircraft Commander's Report on Crewmember*, AF FORM 8, *Certificate of Aircrew Qualification*, AF FORM 15, *United States Air Force Invoice*, AF FORM 70, *Pilot's Flight Plan and Flight Log*, AF FORM 72, *Air Report (AIREP)*, AF FORM 129, *Tally In-Out*, SF 44, *Purchase Order-Invoice-Voucher*, AF FORM 523, *USAF Authorization to Bear Firearms*, AF FORM 457, *USAF Hazardous Report*, AF FORM 651, *Hazardous Air Traffic Report (HATR)*, AF FORM 664, *Aircraft Fuels Documenting Log*, AF FORM 673, *Air Force Publication/Form Action Request*, AF FORM 711B, *USAF Mishap Report*, AF FORM 813**,** *Request for Environmental Impact Analysis*, AF FORM 847, *Recommendation for Change of Publication*, AF FORM 1199, *Air Force Entry Control Card*, AF FORM 1297, *Temporary Issue Receipt*, AF FORM 3211, *Customer Comments*, AF FORM 3858, *C-130/C-141 Aeromedical Offload Message*, AF FORM 4031, *Crew Resource Management (CRM) Assessment Sheet*, AF FORM 4069, *Tiedown Equipment Checklist*, AF FORM 4075, *Aircraft Load Data Worksheet*, AF FORM 4091, *Mission Data*, AF FORM 4137, *International Standardization Agreement Ratification Implementation Data Sheet*, AFTO FORM 46, *Prepositioned Life Support*

Equipment Inventory, AFTO FORM 781, *AFORMS Aircrew/Mission Flight Data Document,* AFTO FORM 781H, *Aerospace Vehicle Flight Status and Maintenance Document,* Customs Form 7507, *General Declaration (Outbound/Inbound),* DD Form 365-3, *Chart C-Basic Weight and Balance Record*, DD Form 365-4, *Weight and Balance Clearance Form F-Transport/Tactical,* DD Form1748, *Joint Airdrop Inspection,* DD Form 1748-D, *Airdrop Malfunction Report (Personnel/Cargo),* DD Form 1801, *DOD International Flight Plan,* DD Form 2131, *Passenger Manifest,* DD Form 2133, *Joint Airlift Inspection Record,* Immigration Form 94, *Arrival/Departure Record.*

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DCS, Operations, Plans and Requirements

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

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Abbreviations and Acronyms

A/C—Aircraft **ACM**—

Additional Crew Member

ACAWS—Advisory, Caution and Warning System

AD—Airdrop

ADS—Aerial Delivery System **AE**—

Aeromedical Evacuation **AECM**—Aeromedical

Evacuation Crew Member **AFCS**—Automatic

Flight Control System **AFRC**—Air Force

Reserve Command **AGL**—Above Ground Level

AGU—Autonomous Guidance Unit

AMC—Air Mobility Command **AMCC**—

Air Mobility Control Center **AOA**—Angle

of Attack

AP—Auto Pilot **APU**—

Auxiliary Power Unit **AT**—

Auto Throttle **ATA**—Actual

Time of Arrival **ATC**—Air

Traffic Control

ATIS—Automatic Terminal Information Service

ATS—Auto Throttle System

AUX—Auxiliary **BARO**—

Barometric

BASH—Bird Aircraft Strike Hazard

BCN—Beacon **BIT**—

Built in Test

BRNAV—Basic Area Navigation Airspace

CAT I—Category I Approach/Nav Route

CAT II—Category II Approach/Nav Route

CARP—Computed Air Release Point

CB—Circuit Breaker

CDA—Collateral Damage Assessment

CDS—Container Delivery System

CFL—Critical Field Length **CMT**—

Charge Medical Technician

COMSEC—Communications Security

CVR—Cockpit Voice Recorder

C2IPS—Command and Control Information Processing System

DH—Decision Height **DME**—

Distance Measuring Equipment

DTD—Data Transfer Device **DZ**—

Drop Zone

EDP—Earliest Descent Point

EMCON—Emitter Control **ERO**—

Engine Running On/Offload **ETA**—

Estimated Time of Arrival **ETE**—

Estimated Time En route **ETP**—

Equal Time Point **FAF**—Final

Approach Fix **FD**—Flight Director

FMC—Full Mission Capable

FMS—Flight Management System

FN—Flight Nurse **FOD**—
Foreign Object Damage **FOM**—
Figure of Merit **G/S**—Glide
Slope **GMT**—Greenwich Mean
Time **GPS**—Global Positioning
System
GPWS—Ground Proximity Warning System
GS—Ground Speed
HAHO—High Altitude High Opening
HALO—High Altitude Low Opening
HARP—High Altitude Release Point
HDD—Head Down Display **HDG**—
Heading
HE—Heavy Equipment **HF**—
High Frequency **HQ**—Have
Quick **HUD**—Head Up
Display **IAS**—Indicated
Airspeed
ICAO—International Civil Aviation Organization
CDS—Improved Container Delivery System
IFF—Identification Friend or Foe **IFR**—
Instrument Flight Rules
ILS—Instrument Landing System
INOP—Inoperative **IP**—
Initial Point
JPADS—Joint Precision Aerial Delivery System
KCAS—Knots Calibrated Airspeed **KIAS**—
Knots Indicated Airspeed
KTS—Knots
LAPES—Low Altitude Parachute Extraction System
LAR—Launch Acceptability Range **LNAV**—
Lateral Navigation

LOC—Localizer **LRU**—
Line Replaceable Unit **LS**—
Line Select
LSK—Line Select Key **LVAD**—
Low Velocity Airdrop **MAF**—
Mobility Air Forces **MAX**—
Maximum Thrust **MC**—Mission
Computer **MCD**—Medical Crew
Director **MDA**—Minimum Descent
Altitude **MEP**—Mission Essential
Personnel **MFD**—Multifunction
Display
MFCD—Multifunction Control Display
MILGPS—Military GPS
MNPS—Minimum Navigation Performance Specification
MDS—Mission Design Series (e.g., C−130) **MWS**—
Missile Warning System
NM—Nautical Mile **OAT**—
Outside Air Temperature **PFD**—
Primary Flight Display
PO—Precision Aerial Delivery System Operator
PPI—Plan Position Indicator **RA/BA**—
Radar Altitude/Barometric Altitude **RCR**—
Runway Condition Reading **REC**—Receive
RNP—Required Navigation Performance
RSC—Runway Surface Condition **SAAM**—
Special Assignment Airlift Mission
SATCOM—Satellite Communications
SC—Secure Communications **SKE**—
Station Keeping Equipment **TOLD**—Take
off and Landing Data

TOT—Time Over Target

VNAV—Vertical Navigation

X−FEED—Crossfeed

XFER—Transfer **XMIT**—

Transmit

Terms

Additional Crew Member (ACM)—. Mobility aircrew members and authorized flight examiners possessing valid aeronautical orders who are authorized to accompany the normal crew complement required for that mission.

Aeromedical Evacuation (AE).—Movement of patients under medical supervision between medical treatment facilities (MTFs) by air transportation.

Aeromedical Evacuation Coordination Center (AECC).—(DOD) A coordination center, within the joint air operations center's airlift coordination cell, 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. Also called AECC.

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.

Air Force Satellite Communication.—Satellite communications system capable of 75 bits per second (BPS) record message traffic.

Air Force Component Commander.—In a unified, sub−unified, or joint task force command, the Air Force commander charged with the overall conduct of Air Force air operations.

Aircraft/Weapon System/Equipment.—Software that makes AFMSS flight plans/products specific to the C−130J or other aircraft.

Air Mobility Control Center (AMCC)—. Provides global coordination of tanker and airlift for AMC and operationally reports to the 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 Element (AME)—. The air mobility element is an extension of the Air Mobility Command Tanker Airlift Control Center deployed to a theater when requested by the geographic combatant commander. It coordinates strategic airlift operations with the theater airlift management system and collocates with the air operations center whenever possible. Also called AME.

Air Reserve Component (ARC)—. Refers to Air National Guard and AFRC forces, both Associate and Unit Equipped.

Air Route Traffic Control Center (ARTCC)—. The principal facility exercising en route control of aircraft operating under instrument flight rules within its area of jurisdiction. Approximately 26 such centers cover the United States and its possessions. Each has a communication capability to adjacent centers.

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.

Allowable Cabin Load (ACL)—. The maximum payload which can be carried on an individual sortie.

Augmented Crew—. Basic aircrew supplemented by additional qualified aircrew members to permit in−flight rest periods.

Bird Aircraft Strike Hazard (BASH)—. An Air Force program designed to reduce the risk of bird strikes.

Bird Watch Condition 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. Keep in mind a single bird in a critical location may elevate the Bird Watch Condition (BWC) to moderate or severe.‖

Bird Watch Condition 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. Keep in mind a single bird in a critical location may elevate the BWC to moderate or severe.‖

Bird Watch Condition 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. Keep in mind a single bird in a critical location may cause a severe BWC.

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, and the dependents of both categories who travel in connection with the death of an immediate family member. It also applies to designated escorts for dependents of deceased military members. Furthermore, the term is used to designate the personal property shipment of a deceased member.

Border Clearance—. Those clearances and inspections required to comply with federal, state, and local agricultural, customs, immigration, and immunizations requirements.

Category I Route—. Any route that does not meet the requirements of a category II route, including tactical navigation and over water routes.

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) or intersection of at least two radio aid radials (VOR, TACAN) or one radial (VOR, TACAN) and one DME at least once each hour.

Chalk Number—. Number given to a complete load and to the transporting carrier.

Charge Medical Technician.—AET responsible for ensuring completion of enlisted aeromedical crew duties.

Chart Update Manual—. Chart Update Manual (CHUM). Manual issued each March and September (with monthly supplements) to update maps/charts with new information. It may reflect temporary or permanent information pending the next chart/map release.

Circular Error Average—. Indicator of the accuracy of an airdrop operation. It is the radius of a circle within which half of the air−dropped personnel and items or materiel have fallen.

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.

Command and Control (—C^2**)**. The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission. Also called C2.

Command and Control Center—. Each C^2 Agency provides supervision, guidance, and control within its assigned area of responsibility. For the purpose of this AFI, C2 Agencies include operations centers, command posts, air mobility elements, tanker airlift control elements (TALCE), air mobility control centers, 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 HOTEL—. 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, formation, low level (below MSA), airdrop (from Drop Preparation Checklist through DZ escape), approach, and landing.

DCS Courier— Members of the U.S. Armed Forces or civilian employees assigned to the DCS, who have completed the DCS Training School and are qualified as couriers by the Commander, DCS. DCS couriers are identified by DCS Form 9 credential sets issued by the DCS.

Deadhead Time—. Duty time for crew members positioning or de−positioning for a mission or mission support function and not performing crew duties.

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 and can be designated only with the aircraft commander‘s concurrence.

Deviation—. A deviation occurs when takeoff time is not within −20/+14 minutes of scheduled takeoff time. Scheduled takeoff time may be adjusted to make good a TOT/TOA. Notify controlling agency before takeoff to adjust the 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).

Digital Aeronautical Flight Information File (DAFIF).—Digitized FLIP data containing airport, runway, navigation aid, and enroute data. Contains both low and high altitude structures.

Digital Features Analysis Data (DFAD).—Selected natural and man−made features collected from photographic and cartographic sources.

Digital Terrain Elevation Data (DTED).—A matrix of terrain elevation values that provides landform, slope, elevation, and/or terrain roughness information.

Director, Mobility Forces (DIRMOBFOR)—. When established, the director of mobility forces serves as the designated agent for all air mobility issues in the area of responsibility or joint operations area, and for other duties as directed. The director of mobility forces exercises coordinating authority between the air operations center (or appropriate theater command and control node), the tanker airlift control center, the air mobility operations control center (when established and when supporting subordinate command objectives), and the joint movement center, in order to expedite the resolution of air mobility issues.

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).

Diverse Departure—. The airfield has been assessed for departure by TERPS personnel and no penetration of the obstacle surfaces exist. An aircraft may depart the field, climb to 400 feet above the departure end of the runway elevation, turn in any direction, and if a minimum climb gradient of 200‘/NM is maintained be assured of obstacle clearance. This is normally indicated on DoD/NOAA publications by the absence of any published departure procedures.

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 aircrews entry into crew rest will be delayed until postflight duties are complete.

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 military aircraft commander 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, section 7.)

DZ Entry Point.—DZ Entry Point. A fixed point in the IFR Drop Corridor where an aircraft or formation may safely begin descent from IFR enroute altitude or a segmented altitude to IMC drop altitude. The DZ entry point is a maximum of 40 NM before the DZ exit point according to Federal Aviation Administration FAR exemption 4371C. Formation descent will not begin until the last aircraft in formation is at or past the DZ entry point.

DZ Exit Point.—A fixed point on the DZ escape flight path centerline, established during pre−mission planning, at which the formation will be at the minimum IFR en route altitude. Calculate the exit point based upon three−engine performance at airdrop gross weight. This point will be planned no less than four NMs track distance beyond the DZ trailing edge.

Earliest Descent Point.—Earliest point in the DZ run−in course where the lead aircraft may begin IFR descent to IFR drop altitude and be assured of terrain clearance for the entire formation. Compute EDP by subtracting formation length from the computed DZ entry point.

Egress.—The route portion from the last objective to the planned recovery base.

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 perform transition training. Each operations group commander will designate familiar fields within their local flying area.

First Suitable Airfield (FSAF).—The first suitable airfield available after completing the Category I route segment.

Force Rendezvous Point (FRP)—. Navigational checkpoint over which formations of aircraft join and become part of the main force.

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. See also medical treatment facility.

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—. 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.

Home Station Departure.—For the purposes of Chapter 4 of this instruction, home station departure refers to a flight duty period which begins at the unit‘s home base and is planned to terminate at another location.

Ingress.—The route portion from takeoff to the last objective.

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.

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. HQ AMC publishes JA/ATT taskings in AMC OPORD 17−76, annex C, appendix 1.

Jumpmaster—. The assigned airborne−qualified individual who controls parachutists from the time they enter the aircraft until they exit. See also stick commander (air transport).

Last Suitable Airfield (LSAF).—The last suitable airfield available before beginning the Category I route segment.

Latest Descent Point—. Latest planned point on the DZ run−in course where the formation plans to initiate descent to drop altitude. This is planned to ensure all aircraft in the formation are stabilized (on altitude and airspeed) before the drop.

L−Band SATCOM—. 600 BPS satellite communications (SATCOM) system contracted through the International Maritime Satellite Organization (INMARSAT), used primarily for command and control. The system consists of a satellite transceiver, a laptop computer, and a printer.

Loading Time—. Specific time established jointly by the commanders concerned when aircraft loading will begin. For paratroopers, 20 minutes before Air Force stations time.

Local Training Mission—. A mission scheduled to originate and terminate at home station, 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 an FN is not onboard, the senior AET will function as MCD.

Military Training Route (MTR). MTRs are developed for use by the military for low−altitude, high−speed training. FLIP contains descriptions of these routes. Nonparticipating aircraft are not prohibited from flying within the boundaries of a MTR; however, they are encouraged to exercise extreme vigilance and to contact FSS for route status when flying in the vicinity of a MTR.

Mission Advisory. Message dispatched by command and control agencies, liaison officers, or aircraft commanders advising all interested agencies of any changes in status affecting the mission.

Mission Contributing (MC). Any degraded component, system, or subsystem, which is desired, but not essential to mission accomplishment.

Mission Essential (ME). A degraded component, system, or subsystem, which is essential for safe aircraft operation or mission completion.

Mobility Air Force (MAF). Forces assigned to mobility aircraft or MAJCOMs with operational or tactical control of mobility aircraft.

Modified Contour—. Flight in reference to base altitude above the terrain with momentary deviations above and below the base altitude for terrain depressions and obstructions to permit a smooth flight profile.

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).—Transferable command authority that may be exercised by commanders at any echelon at or below the level of combatant command. Operational control is inherent in combatant command (command authority). Operational control may be delegated and is the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. Operational control includes authoritative direction over all aspects of military operations and joint training necessary to accomplish missions assigned to the command. Operational control should be exercised through the commanders of subordinate organizations. Normally this authority is exercised through subordinate joint force commanders and Service and/or functional component commanders. Operational control normally provides full authority to organize commands and forces and to employ those forces as the commander in operational control considers necessary to accomplish assigned missions. Operational control does not, in and of itself, include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training.

Operational Missions—. Missions executed at or above 618 TACC level. Operational missions termed "CLOSE WATCH" include CORONET missions. 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.

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.

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.

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.

Overwater Flight.—Any flight that exceeds power off gliding distance from land.

Pathfinder Aircraft—. Aircraft that precedes the main force to the objective area. Its primary functions are to airdrop the CCT and provide current weather information to the main force.

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. Aircraft commanders 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 aircraft commander for not complying with permit to proceed procedures.).

Point Of No Return—. A point along an aircraft track beyond which its endurance will not permit return to its own or some other associated base on its own fuel supply.

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 agency whose primary duty is the coordination of ground handling activities on the ramp during large scale operations.

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.

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 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.

Stabilized Approach.—Criteria that defines specific parameters in order to mitigate the risk during this critical phase of flight.

Stabilization Point—. Point on the DZ run−in course at which the lead aircraft should plan to be stabilized at drop altitude and airspeed. This point will be planned to be at least 6 NMs before the point of impact.

Stations Time.—The time at which aircrews will have completed their pre−flight duties and be at their crew positions. Passengers will be seated and cargo will be secured.

Suitable Airfield.—Airfields which meet weather, fuel, and runway requirements, and are within 50 NM of flight plan course centerline.

Supplemental Training Mission (STM). Opportune airlift of cargo and mission personnel may be accomplished as a by—product of crew training missions. STMs may be authorized when minor adjustments can be made to a scheduled training mission or when a productive aircrew training mission can be generated for the airlift. The training mission will not be degraded in any manner to accomplish the STM. Use of STMs for logistical support will be authorized only when normal military or commercial transportation modes are unable to provide required support. STMs may be approved by the operations group commander. On STMs aircraft commanders will release maximum number of space available seats commensurate with mission requirements and safety.

Tactical Event—. Airdrop, low level, formation, assault landings/takeoffs, tactical approaches/departures, landings to an AMP 3 configured airfield at night.

618 Tanker Airlift Control Center (618 TACC).—The Air Mobility Command direct reporting unit responsible for tasking and controlling operational missions for all activities involving forces supporting US Transportation Command's global air mobility mission. The Tanker Airlift Control Center is comprised of the following functions: current operations, command and control, logistics operations, aerial port operations, aeromedical evacuation, flight planning, diplomatic clearances, weather, and intelligence. Also called TACC.

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.

Terrain Charts.—This includes both digital and paper charts.

Theater Patient Movement Requirements Center (TPMRC).—Organization within a specific theater of operations responsible for coordination of intra− and inter−theater patient movement.

Time Out—. Common assertive statement used to voice crew member 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 the Airlift Service Industrial Fund (ASIF) and Defense Business Operations Fund−Transportation (DBOF−T). Part of the overall Defense Working Capital Fund (DWCF). Used to finance airlift costs that are billed/reimbursed from an air mobility customer. Examples include aircrew TDY costs, utilities/maintenance and repair of TWCF-assigned facilities, civilian pay costs of TWCF-assigned personnel, airlift unit level mission planning expenses, and TDY 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.

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.