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AIR FORCE MANUAL 11-2E-11 VOLUME 3

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Flying Operations

E-11 OPERATIONS PROCEDURES

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This publication implements Air Force Policy Directive (AFPD) 11-2, *Aircrew Operations.* It establishes effective and safe operations of the E-11 Battlefield Airborne Communications Node (BACN) and Payload Control Element (PCE). This publication applies to military and civilian members of the Regular Air Force. This publication does not apply to the Air Force Reserve or the Air National Guard. Ensure all records generated as a result of processes prescribed in this publication adhere to Air Force Instruction (AFI) 33-322, *Records Management and Information Governance Program,* and are disposed in accordance with (IAW) the Air Force Records Disposition Schedule, which is located in the Air Force Records Information Management System. Refer recommended changes and questions about this publication to the office of primary responsibility (OPR), listed above, using the Department of the Air Force (DAF) Form 847, *Recommendation for Change of Publication*; route DAF Forms 847 from the field through the appropriate chain of command to Air Combat Command (ACC)/Airborne Command and Control (C2) Systems Branch (ACC/A3CA). This publication may be supplemented at any level, but all supplements must be routed to the OPR of this publication for coordination prior to certification and approval. The authorities to waive wing or unit level requirements in this publication are identified with a tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See Department of the Air Force Manual (DAFMAN) 90-161, *Publishing Processes and Procedures*, Table A10.1, for a description of the authorities associated with the tier numbers. Submit requests for waivers through the chain of command to the appropriate tier waiver approval authority, or alternately, to the publication OPR for non-tiered compliance items. 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 DAF. Compliance with **Attachment 2** of this publication is mandatory.

SUMMARY OF CHANGES

This rewrite revises AFMAN 11-2E-11V3 by adding Payload Operator (PLO) operational guidance and updates to overall E-11 operating guidance warranting a complete review.

Chapter 1

GENERAL INFORMATION

1.1. Purpose. This manual prescribes procedures applicable to the operation of E-11 aircraft and PCE under most circumstances. It is not a substitute for sound judgment. Procedures not specifically addressed may be accomplished if they enhance safety and improve mission accomplishment. This Air Force Manual (AFMAN) is directive in nature; however, if more restrictive guidance is published, then that guidance will be applied. CCs and supervisors will ensure compliance with this AFMAN.

1.2. Deviations. Deviations from these procedures require specific approval of Major Command (MAJCOM)/Director of Operations (A3) unless the waiver approval authority is already stated or an urgent requirement or an aircraft emergency dictates otherwise. In that case, the Pilot in Command (PIC) will take appropriate action to meet the requirement or safely recover the aircraft and notify the appropriate C2 agency, time and conditions permitting. Do not deviate from policies in this manual except to protect life, preserve safety of flight, or when an in-flight emergency requires immediate action.

1.3. Key Definitions:

1.3.1. "Will" indicates 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., which are considered essential to emphasize.

1.4. Waivers. Tier waiver authorities (T-0, T-1, T-2, T-3) have been added to all mandated unit compliance items (wing level and below) as prescribed by DAFMAN 90-161 and AFMAN 11-202 Volume 3, *Flight Operations*. Forward waiver requests through appropriate channels to ACC Director of Operations (ACC/A3) for approval. All approvals will include an expiration date. **(T-1)** ACC/Standardization and Evaluation Branch (ACC/A3TV) and ACC/A3CA are the offices of coordinating responsibility for all waiver requests to this manual.

1.5. Aircraft Assignment. The E-11 is to be considered a Communication and Battle Management Support aircraft.

1.6. Commercial Publications. Pilots will use the Bombardier Aircraft Flight Publications, FAA publications, restrictions/special instructions (RSIs), and Airplane Flight Manual (AFM) supplements applicable to the E-11. Electronic flight bags (EFBs) are authorized. Payload Operators (PLOs) will use approved system manuals. **(T-2)**

1.7. Distribution. Issue this manual to all E-11 aircrew members IAW local procedures.

1.8. Roles and Responsibilities.

1.8.1. MAJCOMs will provide guidance and approve waivers (as required), where specified throughout this manual.

1.8.2. The squadron commander (SQ/CC), squadron director of operations (SQ/DO), or operations supervisor (Ops Sup) will designate an aircraft commander (AC), instructor pilot (IP), or evaluator pilot (EP) as the PIC for all flights on the flight authorization form. Guidance on PIC is provided in DAFMAN 11-401, *Aviation Management* and applicable MAJCOM supplements. PICs are:

1.8.2.1. In command of all persons aboard the aircraft. **(T-3)**

1.8.2.2. The final mission execution authority. **(T-3)**

1.8.2.3. The final authority for requesting or accepting aircrew or mission waivers. **(T-3)**

1.8.2.4. Responsible for interaction between aircrew and mission support personnel. **(T-3)**

1.8.2.5. Responsible for the welfare of all persons on the aircraft during launch and recovery operations. **(T-3)**

1.9. Major Command (MAJCOM) Coordination. There are times when the system program office (SPO) and/or contractor entities may need to directly coordinate with the operating unit to coordinate on specific concerns related to the entire fleet. It is important that any authoritative decisions related to the modification of the E-11 BACN fleet, associated payload (hardware and software), PCE, contracts, and other requirements are coordinated through the lead MAJCOM (specifically ACC/A3CA). ACC/A3CA, in conjunction with the weapons system team, function as the liaison for MAJCOM oversight of the BACN program.

Chapter 2

MISSION PLANNING

2.1. Roles and Responsibilities. The responsibility of mission planning and execution rests with the PIC. Preparation for the mission tasking and subsequent execution support for training and operational sorties is the coordinated responsibility of the aircrew, liaison officers, and mission coordinator (MC) with other external agencies as necessary.

2.2. Mission Clearance Decision. The final decision to delay a mission will be made by the PIC when, in his or her opinion, conditions are not safe, or mission equipment is inoperative to start or continue a mission. Final responsibility for the safe conduct of the mission rests with the PIC. If the PIC refuses a mission, it will not depart until the conditions have been corrected or improved so that the mission can operate safely. Another PIC and aircrew will not be alerted to take the same mission under the same conditions. **(T-3)**

2.3. Mission Planning Requirements.

2.3.1. Briefings will be defined using briefing guides found in squadron produced standard operating procedures (SOPs) and in-flight guide (IFG).

2.3.1.1. If possible, the MC will brief the crew for operational and training missions to ensure safe, effective mission accomplishment. At a minimum, the tasked missions supported, planned orbit locations, planned takeoff and land times, and any mission requirements that would impact operations will be briefed. All crew and mission players will attend briefings unless excused by PIC or MC. **(T-3)**

2.3.2. Non-operational sorties on the flying schedule will focus on accomplishment of AFMAN 11-2E-11 Volume 1, *E-11 Aircrew Training* requirements, currency, ready aircrew program (RAP) requirements, continuation training (CT) and AFMAN 11-2E-11 Volume 2, *E-11 Aircrew Evaluation Criteria*. **(T-3)**

2.3.3. Aircrew status, using the Aviation Resource Management System (ARMS)/Air Resource Tool Enterprise Mission Information System ARTEMIS), and flight order signing authority will be verified prior to flight. **(T-3)** Aircraft status will be obtained prior to the crew stepping to fly, to include open discrepancies detailed in aircraft maintenance binders. **(T-3)**

2.3.4. Aircraft maintenance documentation, provided to the flight crew by the maintenance contractor, is maintained IAW FAA directives and differs from Air Force Technical Order (AFTO) Forms 781, *ARMS Aircrew/Mission Flight Data Document*. The contractor's quality assurance representative will authorize dispatch release.

2.3.5. The PIC coordinates with the MC to determine orbit limitations and location based on tasking and verifies coordinates/dimensions of any orbits. **(T-3)**

2.3.6. The aircraft configuration with additional cargo and equipment beyond the normal configuration will be accounted for within the aircraft weight and balance forms, iGenesis ®, and aircraft database. Next Generation Diagnostic System (NGDS) will provide this data to aircrew and ensure that all weight and balance systems are coordinated and verified.

2.4. Airborne Communication. Crews are to maintain communications with the MC to the maximum extent possible and coordinate plans to mitigate the negative effects of lost or degraded communications with the MC. **(T-3)**

2.5. Law Enforcement Support. It is the policy of the Department of Defense (DoD) to be prepared to support civilian law enforcement agencies consistent with the needs of military preparedness of the US, while recognizing and conforming to the legal limitations on direct DoD involvement in civilian law enforcement activities. DAFI 10-801, *Defense Support of Civil Authorities*, provides 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 channels. **(T-2)**

Chapter 3

AIRCREW COMPLEMENT/MANAGEMENT

3.1. General. This chapter provides guiding principles for Commanders at all levels to establish and manage crew complements, as well as develop work/rest schedules to optimize efficiency of forces engaged in worldwide operations.

3.2. Aircrew Complement. Aircrew composition will be based on mission directives, crew duty time requirements, flight duty period (FDP) requirements, aircrew qualifications, training requirements, and other constraints to safely accomplish the mission tasking. **(T-3)**

3.2.1. Minimum crew complement is two pilots, and one of the pilots must hold an AC certification. If the payload will be utilized, two PLOs, with at least one with an MC certification, are also required. **(T-2)**

3.2.2. For training sorties, minimum crew complement can consist of an unqualified or non-current pilot with an IP, or a mission pilot (MP) without an AC certification and an MP with an AC certification. Two MPs without AC certifications cannot fly as the only pilot aircrew. **(T-3)**

3.2.3. Minimum crew augmentation consists of an additional MP. Of the three pilots on board, at least two must possess an AC certification and be current in the events to be performed to be considered an augmented crew. **(T-3)**

3.2.3.1. If an MP is non-current in an event to be performed, but a member of the crew is an IP who is current on the event, the MP may still be considered as part of an augmented crew.

3.2.3.2. Minimum PLO augmentation consists of an additional PLO. On operational sorties the PLO augmentee must have an MC certification. **(T-3)**

3.3. Crew Qualifications. Primary crewmembers must be combat mission ready (CMR), basic mission capable (BMC), or in training to occupy a crew position. Non-CMR or non-BMC crewmembers can act as primary crew members on operational sorties if under instructor supervision with SQ/CC approval. **(T-2)**

3.4. Unqualified Crewmembers.

3.4.1. An IP must directly supervise non-current or unqualified pilots from a primary set of controls during critical phases of flight and emergency procedures. **(T-2)**

3.4.2. An Instructor PLO must supervise a non-current or unqualified PLO. **(T-2)**

3.5. Crew Rest/FDP/Crew Augmentation. Comply with AFMAN 11-202V3 direction and applicable MAJCOM supplements along with the following guidance:

3.5.1. If any axis of the autopilot is inoperative, limit pilot FDP to 12 hours and augmented FDP to 16 hours. See Flight Planning General Publication for information on equipment required for flight in reduced vertical separation minimums airspace and consider the impact on mission accomplishment and airspace considerations. **(T-2)**

3.5.2. Unless otherwise directed, aircrew will automatically enter crew rest no later than (NLT) 12 hours prior to the start of their next scheduled FDP. **(T-2)** The unit will notify crews of mission timeline changes prior to entry into crew rest whenever possible. **(T-2)**

3.6. Aircrew Member Support. Crew rest is required for aircrew members supporting aircraft generation (e.g., pre-flight, engine start, engine run). Follow crew rest guidance IAW AFMAN 11-202V3. The duty day begins when the member reports for official duties. **(T-3)**

3.7. Pre-Mission Duties. The PIC, in coordination with the SQ/CC or SQ/DO, may adjust crew report time to meet mission requirements. Crew report times will allow sufficient time to accomplish all preflight activities and will be coordinated before members enter crew rest. Coordinate changes to crew report times with other supporting organizations as necessary (aircrew flight equipment, squadron aviation resource management (SARM), airfield operations, weather, maintenance, Ops Sup, etc.). **(T-3)**

3.8. Transportation of Passengers. Transport of Space-A passengers is not authorized. **(T-2)**

3.8.1. Guidance on transportation of distinguished visitors and orientation flights is provided in Department of Defense Instruction (DoDI) 4515.13, *Air Transportation Eligibility*; DAFMAN 11-401; and DAFMAN 11-401_ACCSUP, *Aviation Management*.

3.9. Mission Essential Personnel (MEP).

3.9.1. The PIC may delegate the MEP briefing to any qualified crewmember.

3.9.2. MEP will not be listed on the AFTO Form 781, will not log time, and do not accrue operation flying duty accumulator credit. Guidance provided in DAFMAN 11-401. **Note:** Current/qualified aircrew may perform primary duties after traveling in MEP status if they do not exceed a basic FDP.

3.9.3. IAW DAFMAN 11-401_ACCSUP, approval for MEPs on board the E-11 is the Operations Group Commander (OG/CC) but can be delegated in writing to the SQ/CC.

Chapter 4

AIRCRAFT OPERATING RESTRICTIONS

4.1. Guidance. This chapter provides guidance on how to operate with degraded equipment. If the PIC elects to operate with degraded equipment or aircraft systems, coordinate mission requirements (e.g., revised departure times, fuel requirements, maintenance requirements) prior to flight with the mission control agency to ensure the decision does not adversely impact current or follow-on missions. **(T-3)**

4.2. Objectives. The final authority regarding equipment required for a mission, rests with the PIC. If one crew accepts an aircraft to operate a mission or mission segment without an item or system, this acceptance does not commit the crew, or a different crew, to accept subsequent operations with the same item or system inoperative. When the PIC considers an item essential, the item will be repaired or replaced prior to departure. During preflight, the PIC will coordinate mission equipment degradations with the MC to determine if the governing operational C2 (e.g., air operations center (AOC) or combined air operation center (CAOC)) will accept the degradation for the assigned mission. **(T-2)**

4.3. Minimum Equipment List (MEL).

4.3.1. The FAA Master Minimum Equipment List (MMEL) for Bombardier Global BBD-700 aircraft will be utilized as the approved MEL for E-11 BACN operations. The MMEL is not intended for continued operations over an indefinite period with systems/subsystems inoperative. Crews will adhere to guidance in the dispatch deviation guide (DDG) and repairs will be completed by the times established in the MMEL. **(T-2)**

4.3.2. All emergency equipment will be installed and operational unless specifically exempted by mission requirements/directives and will be coordinated with and approved by the PIC. **(T-2)**

4.4. Go/No-Go Requirements and Dispatching with Inoperable Equipment. The PIC, in coordination with MC and aircraft maintenance personnel, will assess the impact of degraded equipment/systems. **(T-2)**

4.4.1. The PIC will reference Quick Reference Handbook (QRH) 2 Go/No-Go Guide, DDG, AFM Configuration Deviation List (CDL), applicable RSIs, applicable AFM dispatch supplements, AFM BACN supplements, and the MMEL to determine aircraft suitability for dispatch as well as other publications as needed. **(T-2)** The Go/No-Go Guide in QRH 2 does not supersede data outlined in the MMEL. A “GO” condition still requires MMEL/DDG consultation. **(T-3)**

4.4.2. If dispatched with an MMEL, DDG, Crew Alerting System deviation relief or manufacturer waiver for flight, the PIC will ensure required actions for the relief or waiver are accomplished and documented in the appropriate aircraft forms. **(T-3)**

4.4.2.1. For payload, the MC ensures required actions for the relief or waiver are accomplished and documented in the appropriate forms. **(T-3)**

4.5. One-Time Flight Authorizations. One-time ferry flight authorization to a repair facility may be approved by the OG/CC or O-6 equivalent, provided contract maintenance has received the appropriate engineering disposition report (EDR). If an aircraft has a safety-of-flight condition beyond the immediate or final repair capability of an enroute facility, temporary repairs may be made to allow a one-time flight to a facility capable of final repair. **(T-3)**

4.6. Enhanced Ground Proximity Warning System (EGPWS). For operations in day Visual Meteorological Conditions, with terrain and obstacles clearly in sight, the Pilot Flying (PF) will call runway and/or terrain in sight, state intentions, and visually clear terrain. **(T-3)**

4.7. Traffic Collision Avoidance System (TCAS) Procedures. See manufacturer's guidance**.**

4.8. Adverse Weather. Avoid flight into areas of forecasted or reported adverse weather IAW AFMAN 11-202V3, applicable supplements, Air Force Handbook (AFH) 11-203 Volume 1, *Weather for Aircrews*; and AFM/Flight Crew Operating Manual (FCOM)/RSI limitations.

4.8.1. Icing Restrictions

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

4.8.1.1.1. Aircrew will use the FAA aircraft ground deicing holdover times tables in conjunction with Air Force (AF) Technical Order (T.O.) 42C-1-2, *Anti-Icing, De-Icing and Defrosting of Parked Aircraft*, and aircraft flight manual guidance. **(T-2)**

4.8.1.1.2. The FAA ground deicing holdover times tables from the FAA web site is located at: **https://www.faa.gov/othervisit/aviationindustry/airlineoperators/airlinesafety/deicing/**. **Note:** To clarify ground crew technical order requirements, the FAA ground deicing holdover times are the approved Air Force Flight Standards Agency Flight Directives (AFFSA/XOF) Holdover Tables. Aircrews will only use de-ice and anti-ice fluids listed in the AFM/FCOM or approved by the aircraft manufacturer. **(T-2)** The holdover time begins when anti-icing fluid is first applied and is affected by intensity/type of precipitation, time, temperature, and type/dilution of mixture. PIC will use this information to determine when holdover time is exceeded and re-apply fluid if required.

4.8.1.1.3. Military Type I and Type II de-icing fluids do not provide any anti-icing benefit, and therefore do not have holdover times.

4.8.1.2. Do not fly in areas of forecast or reported severe icing. If severe icing is encountered, the PIC will exit the icing conditions using the most expeditious method possible.

4.8.1.3. Do not hold in icing conditions with slats out.

4.8.1.4. Aircraft will not takeoff or land when runway condition is reported icy with poor braking action, without SQ/CC or SQ/DO approval. Aircrews will not conduct ground operations (taxi or towing) when poor braking action is reported. **(T-2)**

4.8.2. Turbulence Restrictions.

4.8.2.1. Do not fly in areas of forecast or reported severe turbulence. Every effort will be made to avoid areas of reported moderate turbulence. If moderate turbulence is forecast along planned route of flight, the PIC should determine the best altitude to avoid the moderate turbulence. If moderate or severe turbulence is encountered, the PIC will exit the conditions using the most expeditious method possible.

4.8.2.2. The PIC is responsible for ensuring any additional personnel are seated, with seat belts fastened, when areas of moderate or greater turbulence are encountered or anticipated as serious injury may occur. **(T-2)**

4.8.2.3. AFH 11-203 Volume 2, *Weather for Aircrews—Products and Services*, Table 2.2 identifies the E-11 within category III turbulence category. Aircrew will determine for which category a turbulence forecast is given and apply the appropriate conversion IAW AFH 11-203V2, Table 2.3.

4.8.3. Thunderstorm and Lightning Avoidance.

4.8.3.1. Pilots will neither file a flight plan route nor fly into an area of known or forecast thunderstorm activity when the weather radar is inoperative or unusable and thunderstorm activity cannot be visually circumnavigated. Reference AFH 11-203V1 for thunderstorm avoidance guidance.

4.8.3.2. Pilots will not intentionally fly into a thunderstorm.

4.8.3.3. Avoid by at least 20 miles, any thunderstorm identified as severe or giving an intense radar echo. This is especially true under the anvil of a large cumulonimbus.

4.8.3.4. Do not takeoff, fly an approach, or land at an airport where thunderstorms or other hazardous conditions are producing hail, strong winds, gust fronts, heavy rain, lighting, wind shear, or microbursts unless the runway and flight path are clear of hazards.

4.8.3.5. If lightning is reported within 5 miles of an airfield, all takeoffs and landings are prohibited. Waiver authority for non-emergency landing is local OG/CC (or equivalent) or Ops Sup.

4.8.3.6. If lightning is reported within 10 miles of an airfield, thunderstorms are moving away from the field and do not threaten planned departure or arrival routes, takeoffs and landings are authorized.

4.9. Critical Phase of Flight. An MP with AC certification will be at a set of flight controls during all critical phases of flight IAW AFMAN 11-202V3 ACCSUP, *Flight Operations*, including taxi, takeoff, flight below 5000ft Above Ground Level (AGL), approach and landing. **(T-3)** This does not preclude a momentary restroom break or a seat swap with another AC or IP also designated on the AF From 4327a, *Crew Flight (FA) Authorization*.

4.10. Diverts. The PIC and MC will ensure the Ops Sup is notified as soon as practical and request assistance coordinating transportation, security, classified storage, and lodging as required. **(T-3)**

4.11. Aircraft Ground Refueling. The PIC or representative must monitor ground refueling when qualified maintenance or fuels personnel are not available or cannot provide assistance.

4.11.1. Off-station Ground Refueling. defense fuel supply points (DFSP) located on military installations should be used to procure aviation fuel to the maximum extent possible.

4.11.1.1. When DFSP resources are not available use Defense Logistics Agency Energy (DLAE) Into-Plane contract fuel providers to the maximum extent possible. When using the DLAE Into-Plane contract location, ensure to procure the correct contracted product. If the wrong product is purchased, then the unit will be charged a non-contract price. If a non-contract vendor is used at a contract location units will be charged a non-contract price. When no DLAE into-plane contract exists at a commercial airport location, units are authorized to purchase fuel and services from any commercial vendor that has a merchant agreement with multi service corporation that accepts the Air Card contract. Refer to DLAE, *DLA Energy Environmental Guide for Fuel Facilities*. (See Energy Library (**https://www.dla.mil/Energy/About/Library/**).

4.11.1.2. A list of DLAE into-plane contract merchants for each contracted airport location can be found on the Defense Logistics Agency web site (**https://www.dla.mil/Energy/Business/ContractInformationSystem/**) via the "Into Plane Contract Information System."

4.11.1.3. Aircrew should not use Government Travel Cards or personal credit cards to purchase fuel, aircraft services, or pay for landing fees unless under extreme circumstances. The PIC must confirm the fuel payment method before arrival.

4.11.1.4. Air Card. Reference AFI 11-253, *Managing Purchase of Aviation Fuel and Ground Services*, for guidance on Air Card usage for aircrews and contracted maintenance.

4.12. Due Regard. PICs should be familiar with the concept of due regard and be prepared to declare such if necessary. Due regard is defined as 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 certain training activities. Flight under "Due Regard" obligates the military PIC to be his or her own air traffic control (ATC) agency and to separate his or her aircraft from all other air traffic. See Flight Information Publication General Planning and AFMAN 11-202V3 for more information.

4.13. Bird/Wildlife Aircraft Strike Hazard (BASH) Programs. BASH programs are centralized base efforts that provide information cross-feed, hazard identification, and a consolidated course of action. BASH programs are developed and executed by host base safety and bio-environmental offices and approved by host base commanders. Some airfields, i.e., Army, do not have BASH programs and will not set a bird watch condition (BWC), requiring crews to use all available resources to determine local bird conditions.

4.13.1. Mission Planning: PICs will reference Foreflight or the Avian Hazard Advisory System (AHAS) website (**http://www.usahas.com**) within 24 hours of mission execution to determine forecast bird strike potential at takeoff, transition, and landing bases for operational risk management (ORM) purposes. **(T-3)**

4.13.2. Flight: The PIC will obtain the airfield's actual BWC from automatic terminal information service (ATIS), tower, Supervisor of Flying, airfield operations or pilot assessment. Crews may request an AHAS update within an hour of proposed takeoff or landing to get live data with trend information. Aircrews will comply with the following restrictions:

4.13.2.1. BWC Low – No operating restrictions. **(T-3)**

4.13.2.2. BWC Moderate – Initial takeoffs and final landings are authorized only if the departure and arrival routes will avoid bird activity. Flight crews should consult with tower prior to landing or departing. Training is restricted to low approaches at or above 2,000 AGL. Visual flight rules (VFR) traffic patterns and instrument flight rules (IFR) circling approaches are prohibited. **(T-3)**

4.13.2.3. BWC Severe – All takeoffs and landings are prohibited IAW AFMAN 11-202V3. Waiver authority for non-emergency landing is local OG/CC (or equivalent) or Ops Sup.

4.13.2.4. If authorized a waiver for a full stop, the PIC will fly an approach using the best available glide path guidance using a constant rate of descent to the maximum extent possible. Limit the time spent flying at or below minimum descent altitude (MDA) to the maximum extent possible. If a circling approach is required, the PIC will fly the circling maneuver at the highest possible altitude up to VFR pattern altitude and limit time spent flying at the circling MDA. **(T-3)**

4.13.2.5. The PIC is the final authority and may delay takeoffs and arrivals due to BWC. Coordinate delays through the Ops Sup and/or MC if applicable.

4.14. Participation in Aerial Events. See DAFI 11-209, *Participation in Aerial Events*, and the appropriate MAJCOM supplements. Aerial events must be sanctioned and approved by the appropriate military authority and the FAA.

4.15. Suspected Laser Response and Exposure.

4.15.1. Aircrews should recognize the laser may be associated with a weapon posing a greater threat and initiate appropriate evasive action. If a laser threat exists in vicinity of an airfield of intended arrival or departure, aircrew laser eye protection (ALEP) devices should be readily available prior to descent from cruise altitude, or prior to takeoff, as applicable. Removal of ALEP devices after departing a defined laser threat area or after landing is left to discretion of the PIC or IAW local directives. The following procedures should be implemented immediately following suspected laser exposure.

4.15.2. Look away from laser source; do not remove ALEP devices.

4.15.3. Transition to aircraft instruments and turn away from the threat.

4.15.4. If exposed pilot is flying the aircraft, transfer control to unaffected pilot.

4.15.5. Assess visual functionality. If visual disturbance persists for more than 60 seconds, declare in-flight emergency, and return to base as soon as practical.

4.15.6. Notify C2 agency of suspected laser incident.

4.15.7. Avoid rubbing eyes.

4.15.8. If vision returns to normal and there is no pain within 3-5 minutes, the PIC will consider the value of continuing the mission against potential loss of an aircrew member who may have sustained eye damage. **(T-3)** The PIC will determine whether to return to base. **(T-3)**

4.15.9. Upon return to base, accomplish intelligence debrief and report suspected laser exposure incidents IAW procedures outlined in AFMAN 11-301 Volume 2, *Management and Configuration Requirements for Aircrew Flight Equipment (AFE) (CUI)*.

4.15.10. Aircrew who suspects exposure to laser radiation from either friendly or hostile sources should report to Flight Surgeon's Office or nearest emergency room where they can be examined by an ophthalmologist immediately upon landing.

4.15.11. For continued flight in areas of known or suspected lasering activity, crews should obtain ALEP from AFE. Comply with any additional local or theater guidance that may be more restrictive.

Chapter 5

GENERAL OPERATING PROCEDURES

5.1. Personal/Professional Equipment.

5.1.1. Flashlight. Operational flashlight will be available for use on all flights. **(T-3)**

5.1.2. Keep equipment clear of all entry doors, hatches, and emergency equipment during all ground operations. It is the responsibility of each crewmember to store/secure their personal and professional equipment carried onboard. **(T-3)**

5.2. Aircrew Publications Requirements. Publications will be available in paper or digital format and be current for the duration of the mission.

5.2.1. The PIC will ensure the following resources are available on the aircraft prior to departure based on the mission profile:

5.2.1.1. All commercial publications (see **paragraph 1.6**) to include a weight and balance form or equivalent electronic form as required. **(T-2)**

5.2.1.2. Area of responsibility (AOR) specific operations guidance (as required). **(T-2)**

5.2.1.3. Payload crypto re-key checklist (as required). **(T-2)**

5.2.1.4. Flight information publications (FLIP) appropriate for mission requirements or as specified in local standards. **(T-2)**

5.2.1.5. Mission Materials. Mission materials will contain the following, as applicable (electronic versions are acceptable):

5.2.1.6. Navigational chart. **(T-2)**

5.2.1.7. Applicable Special Instructions (SPINS). Aircrew will possess a working knowledge of theater SPINS prior to operating within the theater. **(T-2)**

5.2.1.8. Diplomatic Clearances. **(T-2)**

5.2.1.9. Other documents as required by local or deployed governance.

5.2.2. The MC will ensure the following resources are readily accessible prior to mission execution based on the mission profile:

5.2.2.1. Mission system TOs or commercial equivalent manuals.

5.2.2.2. Mission Materials as applicable for the mission and theater location.

5.2.2.3. AOR specific Operating Guidance.

5.3. Flight Crew Information File (FCIF). Volume I of the FCIFs will be reviewed before all missions for any changes prior to flying. Aircrew will accomplish a complete review of the local FCIF library prior to flying initial sorties in (or before arrival to) the deployed, temporary duty (TDY), or home station environments. Deployed squadrons will maintain an FCIF library IAW local procedures. The Operations Group Stan/Eval Office (OGV) or equivalent FCIF program manager will make current home station FCIFs available to deployed and TDY members in an electronic format. **(T-3)**

5.4. Go/No-Go Procedures.

5.4.1. Purpose. Go/No-Go procedures ensure all individual crewmembers are current, qualified, or adequately supervised to fly on or conduct E-11 BACN mission functions and have reviewed all required FCIFs.

5.4.2. Squadron Go/No-Go procedures will be IAW AFMAN 11-202 Volume 2 ACC Supplement, *Aircrew Standardization and Evaluation Program* and theater guidance as applicable.

5.4.3. The squadron Ops Sup, PIC, and SARM will ensure Go/No-Go procedures are accomplished when a crewmember is added to a flight. **(T-3)** The PIC/Ops Sup at a deployed/TDY location without associated flight management personnel will accomplish Go/No-Go procedures.

5.5. Communications Security (COMSEC) and Classified Material. Obtain and safeguard COMSEC and other classified/keying material required for the mission. The PIC must ensure adequate temporary storage of COMSEC/classified materials when conducting operations at airfields other than the Main Operating Base (MOB). For more information on COMSEC procedures, see unit SOPs.

5.6. Call Signs.

5.6.1. For operational sorties, crews will utilize the voice callsign for their platform as prescribed in the applicable theater air tasking order (ATO) for the specified ATO day. **(T-3)**

5.6.2. The MOB will utilize the voice callsign BACN XX, with the "XX" chosen IAW local SOPs. Call signs for overseas tail swap sorties will not use the BACN callsign but should comply with operations security (OPSEC) guidance and any relevant local or operational directives.

5.7. Departure/Arrival Planning. The PIC will verify routes and flight altitudes to ensure proper terrain and traffic clearance. **(T-2)**

5.8. Runway, Taxiway, and Airfield Requirements.

5.8.1. Minimum runway length is 5,000 ft (1524M) or as calculated using the aircraft Flight Management System (FMS), whichever is longer. **(T-3)**

5.8.2. Minimum runway width is 75 ft (23 M). **(T-3)**

5.8.3. Minimum taxiway width is 25 ft (8 M). **(T-3)**

5.8.4. Minimum width for a 180-degree turn is 68 ft (22 M). **(T-3)**

5.8.5. E-11 aircrews should consult Air Mobility Command's Airfield Suitability and Restrictions Report (ASRR) (see "Giant Report" in ASRR) for airfields suitable for E-11 parking, taxi and takeoff/landing operations. As a rule of thumb, airfield dimensions (e.g., ramp, taxiway, and runway dimensions) for C-37 aircraft will be suitable for E-11 aircraft.

5.9. Touch-and-Go Landings and Missed Approach Limitations. Practice touch-and-go landings only on designated training, evaluation, and currency missions. Touch and go landings on operational sorties will only occur after the mission is complete and will only occur at the discretion of the SQ/CC or SQ/DO. **(T-3)** Accomplishing missed approaches and touch and go landings at deployed environments should appropriately consider local threat levels, risk to the aircraft and crew, maintenance, and scheduling concerns.

5.9.1. Touch-and-go landings may be performed by any pilot from either seat provided that a current and qualified IP or EP is at a primary set of controls. The IP will brief touch-and-go procedures prior to accomplishing the first touch-and-go. If two IPs are in the seat, it will be clearly briefed who is calling the touch-and-go procedures.

5.9.2. Minimum touch and go runway length will be landing field length plus takeoff field length (Flaps 16°) for airfield conditions. **(T-3)**

5.9.3. Minimum touch and go runway width is 135 ft (41M). **(T-3)**

5.9.4. Maximum touch and go crosswind limitation is 10 kts (including gust). **(T-3)**

5.9.5. Conditions at the airfield must be RCR ≥ 10 and precipitation not moderate or heavy. Touch and go landings will not be attempted with standing water on the runway, defined as ≥ 1/8 inch or 3 mm) or ice, snow, or slush. **(T-3)**

5.9.6. Weather must be ≥ 200ft ceiling, ½ mile (2400 RVR) visibility, or lowest compatible approach minimums, whichever is higher. **(T-3)**

5.9.7. Touch and go landings will be conducted at Flaps 30. (**T-3)**

5.9.8. An appropriate visual glideslope indicator or Instrument Landing System glide slope or aircraft produced flight path vector will be used when performing night touch-and-go training. **(T-3)**

5.9.9. Touch and go landings with MEPs on board are at the discretion of the AC. See DAFMAN 11-401 for further guidance on this topic.

5.9.10. Pilots will not accomplish any IFR/VFR pattern training beyond one landing to a full stop when FDP meets or exceeds 12 hours. Practice IFR/VFR approaches and landings may be accomplished with additional crewmembers onboard that have exceeded transition duty day provided they are not occupying a flight crew duty position or performing flight crew instructor or stan eval flight examiner (SEFE) duties.

5.10. Taxi Clearance.

5.10.1. Without wing walkers, avoid taxi obstructions by at least 25 ft. With wing walkers, avoid taxi obstructions by at least 10 ft. **Exception:** Aircraft at home station may delete wing walker restrictions IAW AFMAN 11-218, *Aircraft Operations and Movement on the Ground*. **(T-3)**

5.10.2. When taxi clearance is not adequate, use one or more wing walkers. The AC should use marshallers or wing walkers to act as an observer while maneuvering on narrow taxiways if clearance is in doubt. **(T-3)**

5.11. Taxi Speed. Maximum taxi speed in congested areas is 10kts. Maximum taxi speed in uncongested areas and straight taxiways is 25 kts. High-speed runway exits are extensions of the runway and are not restricted. **(T-2)**

5.12. Foreign Object Damage (FOD) Avoidance. Make every effort to minimize the potential for engine FOD. Crews should:

5.12.1. Minimize power settings during all taxi operations.

5.12.2. Avoid unnecessary use of thrust reversers. **Note:** It is acceptable to utilize thrust reversers during taxi to minimize brake temperatures (reference FCOM1 Hot Weather Operations Supplement). Take into consideration: winds, flap settings, and other environmental factors to minimize FOD and contaminants entering the flap sections.

5.13. Operations over Arresting Cables and Barriers.

5.13.1. Takeoffs will normally commence from the approach end of the runway to maximize runway available. **(T-3)**

5.13.1.1. Do not taxi at more than 10 kts over arresting cables or loose objects. **(T-2)**

5.13.1.2. Aircraft may takeoff immediately past approach-end arresting cables provided that the takeoff data is recomputed for the new runway takeoff position.

5.13.2. Do not land on raised arresting cables to avoid damaging cables or aircraft. **(T-2)**

5.13.3. Do not land over a raised arresting barrier such as an MA-1A. **(T-2)** This does not preclude landing over a BAK 12/14 or other cables.

5.13.4. Do not takeoff or land over a raised arresting cable that has been reported as slack, loose or improperly rigged. **(T-2)**

5.14. Takeoff and Landing.

5.14.1. Pilots may perform takeoffs and landings from either seat. For safety, left-seat pilots will use the Heads Up Display during right-seat takeoffs and landings if it is operational. **(T-3)**

5.14.2. Intersection takeoffs are permitted at the discretion of the PIC. Takeoff distance must be verified by the PIC before an intersection departure and takeoff and landing data (TOLD) must be confirmed acceptable for the conditions. **(T-3)**

5.15. Flight Management System (FMS) Waypoint Verification. One pilot will load filed flight planned routing or ATC clearance and the other pilot will verify. In addition, pilots will verify and confirm the coordinates for all points that are not contained within a current digital aeronautical flight information file (e.g., tactical routing, orbit points). **(T-2)**

5.16. Takeoff and Landing Data (TOLD). TOLD will be run IAW the AFM. Aircraft Performance Group's iPreflight Genesis® application is an approved software to calculate and verify TOLD. Data entry into the FMS is to be verified by both crewmembers. **(T-3)**

5.16.1. A static takeoff will be conducted anytime TOLD indicates a performance limited situation. These situations include but are not limited to Special Departure Procedure (SDP) weight limit codes for brake energy, field length, obstacle, or any time calculated takeoff distance is within 1,000 ft of available runway length. The available runway restriction does not apply during crosswind takeoff procedures. **(T-2)**

5.16.1.1. When takeoff crosswind exceeds 20 kts, high crosswind takeoff procedure must be used (reference FCOM1, chapter 4). The corrected takeoff field length must be increased by 1,700 ft (520 M) for flaps 6°, and 1,500 ft (460 M) for flaps 16°. **Note:** The Rockwell Collins FMS automatically adds the correction factor to takeoff field length when the input takeoff winds exceed 20 kts of crosswind.

5.16.1.2. For Flap 0° takeoffs the corrected takeoff field length must be increased by 1,900 ft(580M) (reference AFM supplement 24, SLAT OUT/FLAP 0°).

5.16.2. SDPs are authorized for use on all missions. Crewmembers will be trained and certified in Aircraft Performance Group SDP operations by unit Stan/Eval prior to use. FMS TOLD will be verified against SDP data before takeoff. **(T-2)**

5.16.3. Climbout Obstacle Planning. At PIC discretion, low close in obstacles listed in the "Trouble-T" section that are greater than 500 ft left or right of runway centerline do not have to be considered for climbout obstacle planning.

5.16.4. TOLD Changes. E-11 aircrews will recalculate TOLD for the following changes to initial calculations prior to initial takeoff:

5.16.4.1. Gross weight changes by more than 500 lbs.

5.16.4.2. Pressure altitude changes by more than 500 ft.

5.16.4.3. Temperature changes by more than 2°C.

5.16.4.4. TOLD Updates. E-11 aircrews conducting transition training will update TOLD every hour or 3,000 lbs of fuel burned, whichever occurs first. The PIC will also ensure TOLD is updated if the temperature increases by more than 2° C, if winds change to create a more negative impact on aircraft performance, or pressure altitude increases more than 500 ft.

5.16.5. Certain airports may issue Declared Distances for either: takeoff runway available (TORA), takeoff distance available (TODA), accelerate-stop distance available (ASDA), or landing distance available (LDA). If a declared distance is published for a runway, then flight crews will use the distance listed in lieu of the runway's physical length. TODA will never be used for TOLD considerations.

5.16.6. For Touch-and-Go operations flight crews will use LDA when determining runway length.

5.17. Wind Restrictions. Wind components (including gusts) for takeoff and landing are IAW applicable AFM limitations.

5.17.1. Maximum wind in any direction is 50 kts.

5.17.2. Maximum tailwind component for takeoff and landing is 10 kts.

5.17.3. Maximum landing crosswind component is 29 kts.

5.17.4. If takeoff crosswind component is 20 kts or greater, utilize high crosswind takeoff procedures (reference FCOM1 Chapter 04-06, High Crosswind Takeoff).

5.17.5. Maximum takeoff crosswind component is 35 kts. **Note:** Maximum takeoff crosswind for contaminated runways is 20 kts.

5.17.6. Maximum tailwind component for engine start is 20 kts. Maximum crosswind component for engine start is 35 kts. **Note:** Any time there is an external or EICAS indication of N1 rotation due to tailwinds, the engine must be dry cranked for 30 seconds followed immediately by an AUTO start.

5.17.7. When winds exceed 20 kts, do not exceed the minimum thrust required for taxi.

5.17.8. The aircraft will be moored when winds are expected to exceed 35 kts, and hangered when winds are expected to exceed 65 kts IAW the Bombardier Ground Handling and Servicing Information publication.

5.18. Bird Strikes.

5.18.1. Following a suspected bird strike, aircrews should land as soon as conditions permit and perform a walkaround to inspect for damage. If damage is deemed significant by the PIC, it will be inspected by qualified maintenance personnel before continued flight. Aircrews involved in a wildlife strike will fill out an AF Form 853, *Air Force Wildlife Strike Report*, and forward to their unit safety offices. For TDY or deployed sorties, forward to the local base safety office IAW local procedures in addition to home unit safety office. **(T-2)**

5.18.2. Bird strike damage cannot be accurately assessed in flight and undetected damage may result in a complex airborne emergency. Aircrews should not change the aircraft configuration until it has been determined that it is safe to do so.

5.19. Radar Altimeter. Any crewmember detecting any low altitude warning of the radar altimeter will immediately notify the PF. **(T-2)** Aircraft position must be verified by the crew. **(T-2)**

5.20. Use of Automation. See **paragraph 10.4**.

5.21. On-Station Procedures. For non-operational missions, orbits will be coordinated through appropriate airspace approval authorities.

5.21.1. Aircrew will accomplish orbit checks IAW SOPs upon initial and subsequent orbit entries to ensure appropriate configuration and inflight planning for the working area. **(T-3)**

5.21.1.1. Such inflight planning will include but is not limited to bingo/joker calculations, emergency/contingency divert field suitability, destination and emergency field weather, drift down data, and glide data.

5.21.1.2. Additional considerations are airfield/runway suitability (e.g., length, width, surface condition), instrument approach options, and hostile/friendly airfield control.

5.21.2. Aircrews will evaluate weather considerations once assuming station and make periodic weather checks as required. This check will include enroute, landing base, and alternate base weather. **(T-3)**

5.21.3. If requirements necessitate a modification to on-station duration, orbit pattern, or altitude, the crew will coordinate with the MC and notify the appropriate ATC/Tactical C2 agencies as applicable. **(T-3)**

5.21.4. The PLO will monitor the on-station E-11's position and immediately inform the aircrew of any identified deviations from the planned orbit. **(T-3)**

5.21.5. During operational missions, the MC must verify and approve all payload configuration changes. Additional roles and responsibilities will be defined in local operating procedures.

5.22. Retrograde/Defensive Procedures. Defensive procedures may be directed by theater C2 agencies or initiated by the PIC for self-defense. The decision to maneuver, retrograde, or change the orbit for self-defense is the decision of the PIC based on the tactical situation and/or theater SPINS. Notify the MC of any retrograde/defensive procedures as soon as possible.

5.23. Aircraft Recall/Diversion. For non-operational training sorties, aircrew will adhere to all appropriate weather recall and divert procedures. The PIC will be directive in nature and consult with the Ops Sup and ATC as necessary.

5.24. Enroute Navigation.

5.24.1. Performance Specification Airspace. The E-11 communication navigation surveillance/air traffic management capabilities are located within Bombardier AFM Supplements and FCOM 1.

5.24.2. Reduced Vertical Separation Minimums (RVSM) Certification. E-11 aircraft and aircrews are certified to fly in RVSM airspace. Notify ATC immediately if any RVSM-required equipment fails while operating in RVSM airspace. Equipment requirements are located within the General Planning document.

5.24.3. Although the E-11 aircraft is an RNP approach certified aircraft and utilizes RNP- 0.3 tolerances on some RNP approaches. Aircrews are not authorized to fly approaches labeled as Required Navigational Performance 0.3 approaches.. **(T-1)**

5.25. In-flight Troubleshooting.

5.25.1. After accomplishing flight manual emergency procedures, aircrews should use all resources available, time permitting, to safely operate and recover the aircraft.

5.25.2. Cockpit Voice Recorder and Flight Data Recorder. If involved in a mishap or incident ensure the following: after landing and terminating the emergency, open the Electrical Management System/Control Display Unit circuit breakers. **(T-1)**

5.26. Prior to Descent or Approach. Before starting a descent into the terminal area, the PF will review instrument procedures and weather, check heading and attitude systems, and coordinate lost communication procedures, if necessary. If holding is not required, reduce to maneuvering airspeed before reaching the initial approach fix. During the descent, control descent rate and airspeed to comply with any altitude or speed restrictions imposed by ATC.

5.27. Descent below Approach Minimums using Enhanced Vision System (EVS). Pilots that are trained, certified, and current on EVS are authorized to descend below the MDA, decision altitude (DA), or decision height (DH) if sufficient visual reference with the runway environment has been established and the aircraft is in a safe position to land. **(T-2)** Pilots will set EVS to "Clear" NLT 100 ft above threshold elevation or touchdown zone elevation to determine if the red termination bars or the red side row bars are distinctly visible and identifiable for landing. **(T-2)**

5.28. Functional Check Flights (FCFs).

5.28.1. Original Equipment Manufacturer (OEM) engineering and manufacturer maintenance manuals, and AF directives determine the requirement for FCFs.

5.28.2. If manufacturer maintenance manuals or engineering reviews recommend an in-flight check following ground maintenance check(s), a flight check specific to the recommendation will be accomplished. **(T-3)**

5.28.3. Aircraft will be at least Partially Mission-Capable (PMC) to perform the check on repaired systems. **(T-3)** Flights should have a fuel load that allows an immediate landing. Flights can be accomplished on operational missions at the discretion of the OG/CC or A-staff equivalent.

5.28.4. Crew complement for Operational Check Flight (OCF)/maintenance check. At a minimum one IP (occupying the left seat) and one MP (occupying the right seat) are required. **(T-3)** If OCF/maintenance check requires operation of the payload equipment one MC and one PLO are also required. **(T-3)**

5.29. Simulated Emergency Procedures in Flight. Simulated emergency procedures are flight deck procedures where the normal configuration of the airplane is altered (e.g., an engine pulled to idle to simulate the loss of an engine) for training. Simulated emergency procedures are not authorized in flight and will be conducted in an aircrew training device. **(T-3)**

5.30. Debriefings. Aircrew members, as designated by the PIC, will debrief with the following agencies as soon as practical after engine shutdown: maintenance, intelligence (if required), MC or PLO and supporting agencies. **(T-2)** The method for this debrief will be determined by operational capabilities (e.g., conference call, in-person, e-mail).

5.31. Weight and Balance Documentation. Equipment, supplies, and gear must be properly documented and accounted for in weight and balance calculations.

5.32. Cargo Documentation. The E-11 is not generally used to transport cargo, however when moving cargo or parts proper cargo documentation must accompany each cargo load. An OG/CC (or equivalent) approved cargo manifest is required prior to all departures with cargo aboard. If a computerized cargo manifest is not available, a cargo listing will accompany the load. The cargo or mail listing may be an abbreviated manifest but will contain all required Military Standard Transportation and Movement Procedures (MILSTAMP) data and information for weight and balance purposes. A Shipper's Declaration for Dangerous Goods is required for hazardous cargo. A Department of Defense (DD) Form 1387-2, Special Handling Data/Certification, is required for signature service cargo. The final authority on the acceptance of any cargo is the AC. (T-2) The following information should normally be obtained before shipping cargo:

5.32.1. Nomenclature of item. Give military or civilian name, national stock number (NSN), and a brief description of the item to be shipped.

5.32.2. Dimensions (in inches): Length, width, and height.

5.32.3. Gross Weight (in lbs.).

5.32.4. Agency/Office responsible for loading the aircraft.

5.32.5. Aircraft Configuration Required.

5.32.6. Preparation of Cargo for Loading.

5.32.7. Loading Procedures.

5.32.8. Tie Down Points.

5.32.9. Off-loading Procedures.

Chapter 6

AIRCREW PROCEDURES

6.1. General. This chapter provides general aircrew procedures that should be utilized during E-11 operations.

6.2. Preflight Guidance. Two pilots are required in primary crew positions to conduct engine start. Two PLOs are required for payload initialization. **(T-3)** Single pilot power-on preflight is authorized. Aircrew members performing preflight duties prior to a scheduled crew's arrival (preflight crews) must be crew rested. **(T-2)**

6.2.1. PICs are to conduct a review of all aircraft forms and sign the aircraft pre-flight briefing form located in the Aircraft Flight Log and Forms Binder onboard the aircraft prior to any crewmember conducting pre-flight duties. **(T-3)** Items affecting the pre-flight/flight will be briefed before execution of preflight duties. **(T-3)** The AC will also ensure the AFTO Form 46, *Prepositioned Aircrew Flight Equipment* is reviewed and signed. PLO review and signature of PCE forms is required prior to payload initialization. **(T-3)**

6.2.2. Crews will verify the following are stored on the aircraft prior to departure:

6.2.2.1. Fuel Cards (all applicable for mission profile). **(T-2)**

6.2.2.2. Aircraft Access and Storage Keys (as required). **(T-2)**

6.2.2.3. Additional survival equipment (as required for directed mission). **(T-2)**

6.3. Engine Runs. Flight operations and maintenance personnel are responsible for providing manufacturer's guidance to aircrew to complete required actions. A crew chief will maintain contact with crew via interphone and have safety equipment readily available. **(T-2)** If a maintenance procedure is required in addition to the aircrew checklist, a brief will be conducted between maintenance and the aircrew. **(T-3)** The brief will include at a minimum:

6.3.1. Plan for the engine run. **(T-2)**

6.3.2. Maintenance procedures to be accomplished. **(T-2)**

6.3.3. Potential emergency procedures, including egress plan in case of an emergency. **(T-2)**

6.3.4. Engine start procedures based on wind and rotor bow criteria IAW AFM limitations. **(T-2)**

6.4. Cabin Security. The AC will ensure all items in the cabin are secure prior to taxi. **(T-2)**

6.5. Carriage of Mission Essential Personnel (MEP). The PIC will ensure personnel onboard are familiar with or briefed on emergency egress IAW **Attachment 2**. Personnel will remain seated until passing above 10,000 ft AGL and be seated for landing when descending below 10,000 ft AGL or as directed by the PIC. **(T-2)**

6.6. Jump Seat Usage. If used, keep the jump seat stowed or jump seat chair back folded down until after the engines are started to maintain a clear path for the crew to egress the aircraft. Do not let unfamiliar personnel deploy or stow the jump seat. **T-3)**

6.7. Seat Belts. All occupants will have a designated seat with a seat belt. Use of seat belts will be as directed by the PIC, this manual, AFMAN 11-202V3, and the MAJCOM Supplement.

6.8. Egress Procedures. The PIC will brief appropriate egress locations and procedures prior to engine start. Plan to rally at a suitable safe shelter/area. **(T-3)**

Chapter 7

AIRCRAFT SECURITY

7.1. General. This chapter provides guidance for aircraft security on the ground and in flight. This security priority designation applies to operational aircraft, wherever they are located, worldwide. Some aircraft contain equipment and documents that require protection per Department of Defense Manual (DoDM) 5200.01 Volume 3_DAFMAN 16-1404 Volume 3, *Information Security Program: Protection of Classified Information*. Guidance can be found on aircraft security in AFI 13-207-O, *Preventing and Resisting Aircraft Piracy (Hijacking) (FOUO)*; AFMAN 31-101 Volume 1, *Base Defense Planning (CUI)*; and other specific MAJCOM or theater security publications. Aircrews will not release information concerning hijacking attempts or identify armed aircrew members or missions to the public. **(T-2)**

7.2. Protection Level (PL). The E-11 and PCE are PL-3 assets.

7.3. Procedures. The PIC is ultimately responsible for the security of their aircraft when not at US military installations. DAFMAN 31-101V1 covers security arrangements when USAF aircraft are at other DoD installations. Arrangements must be made to protect the aircraft during crew rest at non-US protected locations and must be coordinated with ACC in advance if possible. **(T-0)** If US military or appropriate allied security forces are not available, the US embassy assigned to that country must be consulted to ensure security arrangements are made. **(T-0)** For missions involving a planning agency, the agency must coordinate with the PIC to ensure that planned security measures meet mission requirements. **(T-0)** The level of security required may vary, depending on location and ground time.

7.3.1. For permissive environments, the PIC will receive a threat assessment and force protection capability evaluation briefing prior to departure and receive updates enroute, if required. **(T-2)** Aircrew should consider OPSEC and "zero-ize" FMS routing, waypoints, and takeoff data, as required, before departing the aircraft. At DoD installations, the installation commander is responsible for providing adequate security for the aircraft. The PIC will determine if security is adequate. **(T-2)** Planning agencies and the PIC will assess the risk to aircraft for planned overnight stops at non-US military installations. **(T-2)**

7.3.2. For unscheduled landings at non-USAF installations, the PIC will assess the aircraft security situation and determine suitability IAW aircraft protection level requirements. **(T-2)** If force protection capabilities are insufficient, the PIC will take the following actions:

7.3.2.1. Aircrew Surveillance. Aircrew members may maintain aircraft security. The PIC will direct crewmembers or E-11 maintenance personnel to remain with the aircraft and maintain surveillance of aircraft entrances and activities in the aircraft vicinity. **(T-2)**

7.3.2.2. Area Patrol. If necessary, the PIC will request area patrol coverage from local security forces to include back-up response forces. **(T-2)** If local authorities request payment for this service, contact the SQ/CC who will coordinate with ACC/A3CA, the BACN Weapon System Team, and the SPO. **(T-2)** If unable to contact leadership and secure the aircraft by other means, use Standard Form (SF) 44, *Purchase Order – Invoice Voucher (Storage Safeguard Form)*, and contact leadership as soon as possible.

7.3.2.3. Departure without Crew Rest. If local security forces are not suitable, the PIC is authorized to exceed the FDP and depart as soon as possible for a destination with adequate force protection. If unable to depart the location due to system malfunction, the aircrew must secure the aircraft to the best of their ability. **(T-0)** In no case will the entire crew leave the aircraft unattended. Crew rest requirements will be subordinate to aircraft security when the aircraft 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. The PIC will coordinate through C2 channels to acquire additional security. **(T-2)**

7.4. Use of Aircraft Safe. The aircraft safe on the E-11 aircraft meets the requirements set forth in DoDM 5200.01V3_DAFMAN 16-1404V3. Crews are authorized to store COMSEC and classified materials in the safe while off-station provided crews abide by the caveats in the aforementioned publications. When off-station at non-DoD installations, the PIC will ensure the safe is secured and that the aircraft is locked. **(T-2)**

7.5. Divert Guidance. Secure materials in the safe, lock the airplane and check for tampering when arriving at the aircraft the next day. IAW DoDM 5200.01V3_DAFMAN 16-1404V3 attempt to have the aircraft and safe checked for tampering every 12 hours. If unable to check for tampering every 12 hours due to crew rest, perform these checks as soon as possible after official end of crew rest. **(T-3)**

Chapter 8

NAVIGATION PROCEDURES

8.1. Portable Electronic Devices for Navigation. IAW AFMAN 11-202V3, aircrews are authorized to carry approved automatic dependent surveillance broadcast (ADS-B) and GPS-enabled devices for additional situational awareness (SA).

8.2. Outside the Continental United States (OCONUS) and Oceanic Operations.

8.2.1. For E-11 Oceanic and OCONUS operations, outside of a currently stationed AOR, a certified dispatch service should be utilized. It is acceptable for aircrew to conduct OCONUS and oceanic operations without a certified dispatch service, in which case the aircrew will be responsible for all aspects of the mission planning, to include diplomatic clearance approval. Aircrew will abide by DoD and ICAO regulations and guidance for all OCONUS and oceanic operations.

8.2.2. All waypoint data inserted into the FMS, including coordinate information and distance between waypoints will be checked against the flight plan and confirmed by a second pilot. **(T-3)**

8.2.3. Once the oceanic clearance is received and any time the oceanic clearance is changed, both pilots will reverify waypoint data inserted into the FMS. **(T-3)**

8.2.4. Pilots should check HF radios prior to departure on any sortie where their usage may be required.

Chapter 9

FUEL PLANNING

9.1. General. A fuel plan is required for all flights except flights with established standard profiles. Missions should be planned at altitudes, routes, and airspeeds to optimize fuel usage and maximize mission effectiveness, allowing for mission extensions if required.

9.2. Fuel Planning Profiles. Enroute cruise airspeeds should be planned at a constant Indicated Airspeed (IAS)/Mach IAW the performance manual.

9.2.1. Divert profiles should be fully fuel planned and represent the routing, altitude, and airspeed that will actually be flown in a divert situation.

9.2.2. Throughout the mission, FMS Performance pages should be updated to ensure situational awareness is maintained on accurate bingo time and fuel for recovery requirements.

9.2.3. Aircrews should be aware that due to A-kit/Config 2 external antennas/equipment causing additional parasitic drag not accounted for by Bombardier performance data. Fuel burn can increase by approximately 100pph, requiring a 2.5% fuel degrade to compensate.

9.3. Fuel Planning Procedures. Fuel optimization will be considered throughout all phases of mission planning and execution.

9.3.1. Crews will declare “minimum fuel” and request priority handling by ATC when projected fuel at the planned destination will be less than 2,000 lbs.

9.3.2. Crews will declare “emergency fuel” and request priority handling by ATC when projected fuel at the planned destination will be less than 1,200 lbs.

Chapter 10

FLIGHT PATH MANAGEMENT (FPM), OPERATIONAL RISK MANAGEMENT (ORM), CREW RESOURCE MANAGEMENT (CRM), THREAT AND ERROR MANAGEMENT (TEM)

10.1. Flight Path Management (FPM). The term "flight path" applies any time the aircraft is in motion, including taxiing the aircraft. FPM is the planning, execution, and assurance of the aircraft's guidance, trajectory, and energy state in flight or on the ground. All flight deck aircrew members must ensure that effective FPM is a primary and shared responsibility during all phases of flight. FPM is comprised of 3 aspects (Planning, Executing, and Monitoring):

10.1.1. Planning. Developing a thorough understanding of the aircraft's desired flight path. Planning is dynamic and includes changes driven by the mission, environmental considerations, and clearances from authorities, such as ATC. **Note:** For the purposes of this document, a clearance is the flight path of the aircraft, as normally defined by the assigned ATC clearance. Typically, two pilots must hear/read, understand, anticipate its impact, and comply with the clearance, unless otherwise deemed necessary for the safe conduct of the flight. Other flight deck members who have the training, ability, and authority to do so should assist with clearance acceptance.

10.1.2. Executing. The process through which the aircrew controls the aircraft and achieves compliance with the desired flight path.

10.1.3. Monitoring. The process through which aircrew members monitor compliance with the desired (planned) flight path. Effectively monitoring the flight path is a critical TEM task that identifies and corrects FPM errors that might lead to flight path deviations or Undesired Aircraft States. As a primary and shared responsibility, monitoring is equally as important as controlling the aircraft. Monitoring requirements vary depending on phase of flight and on situations encountered within each phase of flight. Aircrews should anticipate flight situations or phases where they will be most vulnerable to flight path deviations (Areas of Vulnerability [AOVs]) and strategically manage workload and distractions to maximize monitoring during these AOVs. **(T-3)**

10.2. Operational Risk Management (ORM).

10.2.1. 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 DAFI 90-802, *Risk Management*. PICs will accomplish ORM worksheets IAW MAJCOM and local guidance as part of preflight activities. **(T-2)**

10.2.2. Flying units will develop a local ORM program to include personal ORM assessment for all missions and accomplished by all crew members at the beginning of each FDP. **(T-3)**

10.2.3. Risk Assessment. PIC or designated representative will complete an ORM Risk Assessment Worksheet and have the appropriate authority review and sign IAW AFI 90-802 ACC SUPP (OG/CC or equivalent approve risk management worksheets acceptable) to determined risk category.

10.2.3.1. All aircrew members will complete the ORM worksheet at crew show prior to the step brief. Each member's score will be considered as part of the overall ORM valuation. The Risk Assessment worksheet valuation and mitigation will be briefed to the crew by the PIC at the Flight Execution Brief and to the designated approval authority for the sortie (Ops Sup, SQ/DO, SQ/CC, OG/CC (or equivalent), or WG/CC).

10.2.3.2. PIC will address crew members with HIGH personal risk assessments annotated on the Flight Authorization. The PIC may elevate HIGH personal risk assessments if deemed necessary.

10.2.3.3. PIC should ensure that ORM is updated, and the correct level of approval authority is coordinated with, as mission/sortie factors change.

10.3. Crew Resource Management (CRM)/Threat and Error Management (TEM).

10.3.1. CRM is the effective use of all available resources, people, weapon systems, facilities, equipment, and environment by individuals or crews to safely and efficiently accomplish an assigned mission or task.

10.3.2. TEM is a structured, proactive, systems approach that is intuitively, logically, and flexibly designed. It builds on multiple layers of defenses to identify, prevent, and mitigate threats and/or trap or mitigate inevitable human errors to avoid undesired aircraft states and potential mishaps. See AFMAN 11-290, *Cockpit/Crew Resource Management and Threat & Error Management Program,* or applicable MAJCOM Supplement for additional information.

10.3.3. Knock-It-Off (KIO) and Terminate Procedures. Use KIO or Terminate procedures to direct aircraft or aircrew to stop engagements, scenarios, and tactical maneuvering IAW AFMAN 11-214, *Air Operations Rules and Procedures*. **(T-2)**

10.4. Automation Management. It is the responsibility of the crew to fully understand the operations and limitations of the automation on each aircraft. The first priority is to fly the aircraft.

10.4.1. Aircraft automation systems are tools intended to enhance safety, maximize efficiency, improve operational capabilities, and reduce pilot workload. **Note:** Although automation can assist with seeing and avoiding conflicting traffic, at least one pilot should maintain visual outside awareness by remaining "heads-up."

10.4.2. Flight Automation. Pilots should maintain proficiency in the use of all flight automation levels and the skills required to seamlessly shift between those levels. Available flight automation levels vary between aircraft and may include many combinations of flight director guidance and autopilot modes including partial automation. The level of flight automation used will permit both pilots to maintain SA and a comfortable distribution of workload. If the use of flight automation creates a loss of SA or results in task saturation, the pilot should shift to a less demanding level or disconnect the automation entirely and re-establish the desired aircraft flight path. Pilots should choose an appropriate flight automation level consistent with changing flight environments and balanced with the requirement to maintain manual flying skills.

10.4.2.1. The PF will determine, announce, and fly the aircraft using the appropriate level of flight automation IAW SOPs, flight manual guidance, and applicable regulations. **(T-2)** The pilot monitoring (PM) will acknowledge the announcement. **(T-2)**

10.4.2.2. Avoid the following common pitfalls associated with over-reliance, misuse, or misunderstanding of automation:

10.4.2.2.1. Fixating on automation. One pilot should always remain "heads up" and eyes outside the cockpit or on flight instruments. Establish clear roles for computer-related tasks. Announce "heads down" when the task requires focusing significant attention on the FMS in flight and ensure the other pilot is aware.

10.4.2.2.2. Poor prioritization of programming tasks. Work to minimize reprogramming during critical phases of flight or during periods of high workload should be avoided.

10.4.2.2.3. Poor mode awareness. Pilots must apply the concept of "verbalize, verify and monitor" when using automation. During uncoupled flight, the PF should direct the PM to make changes to the guidance panel (GP) to match the flight director. Confirm all mode changes by observing the correct flight mode annunciations.

10.4.2.2.4. Mismanagement of altitude preselect. Programmed altitudes and altitude changes will be confirmed by both pilots. **(T-2)**

10.4.2.3. Units may develop local SOPs, supplementing Bombardier Global BBD-700 Operations Reference Manual automation guidance. **(T-3)**

10.4.3. Information Automation (IA). Managing information is an important aspect of FPM. The quantity and type of information available to the aircrew has substantially changed and will continue to change. IA is automation devoted to the management and presentation of relevant information to flight deck aircrew members. Examples of IA systems include the EFB, aircraft communications addressing and reporting system (ACARS), moving map displays, performance management calculations, multi-function displays, data uplink, alerting systems including lights and audible and tactile alerts, and FMS display unit pages and scratch pads.

10.4.3.1. Aircrew members must be proficient in the use of automated systems and in accessing and interpreting automated information, determining its reliability, and understanding how to use the acquired information. These tasks must occur seamlessly throughout the flight to prevent distraction from primary FPM tasks.

10.4.3.2. Head-Up/Head-Down Policy. Establish clear roles for computer-related tasks. One pilot should always remain "heads-up." Announce "pilot head-down" or "copilot head-down" when the task requires prolonged attention within the flight deck. Other than momentary occasions, any crewmember who observes both pilots "heads-down" at the same time (other than instrument flying) will announce the issue to the aircrew without delay. **(T-2)**

10.4.4. Verbalize, Verify, and Monitor (VVM). VVM is a closed-loop system of communication designed to significantly reduce aircraft automation errors. Aircrews will utilize VVM practices unless safety of flight requires a temporary deviation from these requirements. **(T-3)** VVM consists of a three-step process:

10.4.4.1. Verbalize. Prior to making changes to the selected/armed flight guidance (including altitude), the crewmember performing the action verbalizes the intended change(s).

10.4.4.2. Verify. The appropriate crewmember(s) verify the intended changes prior to execution. The crewmember(s) responds to the intended change(s) by verbally confirming the change or notifies the challenging crewmember of an issue and/or concern. When necessary, visual cues confirming intended change(s) are acceptable but are not normally the primary method for confirmation. If visual cues are used, when time allows, ensure all appropriate flight deck crew members are aware of the executed action by verbally reviewing the executed action.

10.4.4.3. Monitor. Once the intended action(s) has/have been confirmed and "executed," crew members continually monitor the aircraft to ensure the expected performance is achieved by staying vigilant and situationally aware.

10.5. Pilot Flying (PF) and Pilot Monitoring (PM) Duties. There must be a clear understanding of the PF and the PM duties at all times. The terms PF and PM are used to designate pilot roles and procedural duties when the aircraft is in motion or as designated by AFM guidance. Controlling and monitoring the aircraft flight path is the highest priority of the PF and PM, regardless of automation level.

10.5.1. PF/PM roles may change throughout a flight. Transfer of PF and PM roles must be clear to all primary crew members. The transfer will be expressed using a three-part aircraft control transference statement and should be done positively with verbal assignment and verbal acceptance to include a short brief of aircraft state, as necessary. Depending on the situation it is suggested that the transference statement include airspeed, altitude, heading, and/or automation configuration. An example is as follows: Pilot: "Copilot's aircraft. We're level at flight level 310 at 275 knots and the autopilot is engaged in heading mode; heading 3-0-0." Copilot: "Understood. Copilot's aircraft." Pilot: "Copilot's aircraft."

10.5.2. Pilot Flying (PF).

10.5.2.1. The pilot at the flight controls who is in direct maneuvering control of the aircraft. The PF is primarily responsible to control and monitor the aircraft's flight path (including flight automation, if engaged).

10.5.2.2. The PF is secondarily responsible to monitor non-flight path actions (e.g., radio communications, aircraft systems) but must never allow these activities to interfere with their primary responsibility.

10.5.2.3. The PF should also recognize when the PM is not adequately monitoring the flight path and make the PM aware of this deviation.

10.5.2.4. Assigning non-flight path-related tasks to the PF should generally be avoided. If the PF must engage in activities that distract from flight path control tasks, the PF should transfer aircraft control to the other pilot, and then assume the PM role.

10.5.3. Pilot Monitoring (PM).

10.5.3.1. In addition to mission design series (MDS)-specific T.O. guidance, the PM is the pilot at the flight controls who is not in direct maneuvering control of the aircraft yet is primarily responsible to actively monitor the aircraft's flight path, intervening, if necessary, within pre-established parameters.

10.5.3.2. The PM supports the PF by accomplishing non-flight path actions (e.g., radio communications, aircraft systems) but should continue to monitor the flight path.

10.5.4. Pilot Monitoring (PM) Behaviors. An effective PM should:

10.5.4.1. Be knowledgeable of all policies and procedures related to monitoring the flight path (e.g., callouts).

10.5.4.2. Recognize when the PF is not adequately controlling the flight path. This includes pilot task loading and signs of diminished performance (e.g., lack of communication, channelized attention, and failure to make required callouts).

10.5.4.3. Be aware of applicable common errors regarding monitoring the flight path. This includes appropriate methods of recognizing precursors and signs of degraded monitoring and on resolving monitoring errors and/or lapses.

10.5.4.4. Be competent regarding the concept of areas of higher vulnerability. If the PM recognizes the flight phases or situations when they are most vulnerable to flight path deviations (including when little time exists to correct deviations), then tasks can be planned strategically, and workload managed to maximize flight path monitoring during those phases.

10.5.4.5. Be knowledgeable of CRM/TEM principles and human performance vulnerabilities related to monitoring, the importance of monitoring, and the approved practices that achieve effective monitoring of the flight path.

10.5.4.6. Be aware of system failures that may distract from effective monitoring and proper FPM.

10.5.4.7. Be able to manage distractions that interfere with monitoring the flight path by managing task priorities and effectively switching between other tasks and monitoring of the flight path so that flight path vigilance is always maintained. The PM should be able to apply task management strategies that enable pilots to use charts, EFB, ACARS, etc. While also effectively monitoring the flight path and airplane energy state.

10.5.4.8. Employ intervention methods that can be used to help the PF regain proper control of the flight path (e.g., calling out deviations, levels of assertiveness).

10.5.4.9. Have a working understanding of automated flight guidance and flight control systems. The PM should understand what happens next given a certain set of flight circumstances, and the reasons why. The knowledge should incorporate FMS degradations, failures, and operational consequences requiring flight crew action, known flight guidance and flight control system-behavioral challenges and environmental/circumstantial traps (e.g., vectors off and on a standard terminal arrival during a “descend via” clearance) that are known to lead to flight path-related errors.

10.5.5. Be able to sufficiently collaborate with the PF to transition seamlessly between combinations/levels of flight guidance or flight control automation (including manual flight) by anticipating, recognizing, and recovering from known flight guidance system-behavioral challenges (e.g., subtle mode reversions). **Note:** Flight guidance includes FMS and flight control (includes autopilot and autothrottles).

10.6. Advisory Calls.

10.6.1. Advisory calls and responses between the PF and PM will be accomplished IAW bombardier operating manuals and AFMAN 11-202V3 ACC Supplement, *Flight Operations*. This does not prevent unit CCs from publishing and utilizing additional procedures for advisory callouts.

10.6.2. The PF will announce intentions for departures, arrivals, approaches, and when circumstances require deviating from normal procedures. **(T-2)** Should any crewmember be unsure of the PF's intentions, they will ask for clarification prior to accomplishment. **(T-2)** Unless otherwise directed, all primary crew members (as applicable) will acknowledge mandatory calls. **(T-2)**

10.6.3. The PM will make all normal advisory calls except those designated for other crew members by FAA specific guidance and this manual. **(T-2) Exception:** Automated aircraft advisories satisfy this requirement if acknowledged by a primary crewmember. Additionally, aircrew members (PM or otherwise) will advise the crew anytime the primary radio is changed. **(T-2)**

10.6.4. Deviation Advisories. IAW sound CRM/TEM practices, aircrew members will inform the PF when flight path deviations exceed (or will exceed) tolerances, and no attempt is being made to correct the deviation. Tolerances are defined by MDS specified SOPs. In absence of MDS SOPs, use the most restrictive of MDS specific Volume 2 (e.g., takeoff safety speed) criteria, standards, or flight manual guidance. **(T-2)** Any crewmember noticing a potential terrain and/or obstruction issue will immediately notify the PF. **(T-2)** The PF will take immediate corrective action. **(T-2)** This is especially important during critical phases of flight, nighttime, and/or instrument conditions.

10.6.4.1. Under normal flight conditions, deviations observed in excess of heading (+/- 5°), airspeed (+10/-5 kts), or altitude (+/- 100 ft) will be announced by any aircrew member using clear and concise terminology (example: "XX knots fast"). **(T-2)**

10.6.4.2. When conducting planned maneuvers with tolerances different than those listed above, comply with air force tactics, techniques, and procedures 3-3 guidance for "Terminate Criteria." **(T-2)**

10.6.4.3. Emergency Advisories. Any crewmember detecting an existing or impending emergency condition will immediately inform the AC. The PF will take necessary action to establish and/or maintain control of the aircraft and call for the appropriate checklist. **(T-2)**

10.7. Critical Action Coordination (CAC). During an emergency, as a general guideline the PIC should attempt to assume control of the aircraft unless it has been determined that safety of flight would be compromised by assuming control (e.g., PIC is not at the controls during the induction of the emergency). Those actions that are flight critical/irreversible in nature must always be confirmed by two crew members. **(T-2)** These actions include but are not limited to placing the throttles to IDLE and engine run switches to off, pulling the engine fire handle, discharging agent, and other actions determined to be critical in the aircraft flight manual. CAC is performed as follows:

10.7.1. Flight Deck crew members verbally and visually identify the affected control, (e.g., "CONFIRM LEFT ENGINE"). The crewmember performing the action points to the affected control. The crewmember monitoring the action verbally and visually confirms the proper control is selected, (e.g., "LEFT ENGINE"). The crewmember performing the action then actuates the affected control. **Note:** During any emergency, the AC normally notifies the crew of the emergency, and the PM normally notifies all others concerned, such as ground control, tower, etc.

10.7.2. Rejected Takeoff (RTO) Decision Making. The RTO/Continue Takeoff decision making process is dynamic, time critical, and may be complex. Aircrew can mitigate takeoff hazards by building a shared mental model of the takeoff including TOLD, aircraft systems, weight and balance, terrain, environmental conditions, high-speed vs low-speed reject risks. The PIC is the final decision authority and should ensure a clear understanding of expected crew actions.

10.8. Stabilized Approach. 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.

10.8.1. Stabilized Approach Criteria. The following stabilized approach criteria applies to all approaches and will be emphasized and briefed for every approach (Use an abbreviated briefing for multiple approaches conducted in the same terminal area):

10.8.1.1. Aircraft is in landing configuration. Final flap configuration may be delayed but will be briefed. **(T-3)**

10.8.1.2. Airspeed is appropriate for the configuration and conditions. **(T-3)**

10.8.1.3. Sink rate is no greater than 1000 feet per minute (fpm). **Note:** Under certain conditions (e.g., weather, terrain) some approaches may require greater than a 1000 fpm descent rate. This increased sink rate will be briefed. **(T-2)**

10.8.1.4. All briefings and checklists are complete unless contrary to AFM guidance. **(T-3)**

10.8.1.5. Aircraft is on the correct track. **(T-3)**

10.8.1.6. Aircraft is in the correct bank angle to maintain proper approach track for instrument, circling, or visual approach. **(T-3)**

10.8.1.7. Power set to maintain the descent profile at approach speed. **(T-3)**

10.8.1.8. Momentary minor corrections or deviations are acceptable and defined as:

10.8.1.8.1. Airspeed: +10/-5 kts from target. **(T-3)**

10.8.1.8.2. Bank Angle: +/- 15° from target. **(T-3)**

10.8.1.8.3. Rate of Descent: +/- 300 fpm from target. **(T-3)**

10.8.2. Stabilized Approach Procedures. The following procedures apply to all approaches:

10.8.2.1. At 1000 ft height above touchdown (HAT), the stable criteria in **paragraph 10.8.1** apply or as determined by specific MDS SOPs, standards, or AFM guidance.

10.8.2.1.1. If these criteria are not met at 1000 ft HAT, the PM will announce the deviation, and the PF will take immediate corrective action. **(T-2)** PM will state "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." **(T-2)**

10.8.2.1.2. If criteria are met, PM will state "1000, stable."

10.8.2.2. Between 1000 ft and 500 ft HAT:

10.8.2.2.1. Parameters are the same as those in **paragraph 10.8.1**.

10.8.2.2.2. 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. **(T-2)**

10.8.2.3. At 500 ft HAT:

10.8.2.3.1. Parameters are the same as those in **paragraph 10.8.1**. If accomplishing a VFR or circling approach, aircraft must meet all parameters in **paragraph 10.8.1,** and also, be in a safe position to land.

10.8.2.3.2. If criteria are met, PM will state "500, stable."

10.8.2.3.3. If unstable or not in final flap configuration at 500 ft HAT, the PM will call "Go around" and the PF will execute a go-around.

10.8.2.4. From 500 ft 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.

10.8.3. Descent Planning and Energy Management. Awareness of maneuver entry parameters and energy management is crucial to meeting the stabilized approach criteria on every approach. Aircrew members will ensure the aircraft is following the planned descent profile. All non- tactical descents should follow a normal descent profile IAW AFMAN 11-202V3 procedures and techniques in the absence of ATC or FLIP guidance. 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.

10.8.4. 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 maximum extent possible, this study will take place during the crew mission briefing and reviewed again prior to descent.

10.8.5. 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 the Flight Manual and AFMAN 11-202V3 procedures.

10.8.6. Aviation Safety Action Program (ASAP).

10.8.6.1. ASAP is an identity-protected, self- reporting system that is integral to reducing mishaps and improving operations and training. ASAP is designed for Airmen to report information and concepts critical to resolving mishap precursors and to share this information across AF aviation communities. The information is used to reduce mishaps through operational, logistic, maintenance, training, and procedural enhancements.

10.8.6.2. Data generated from the ASAP process is not used for monitoring personnel performance or to initiate punitive or adverse action. Violations of the Uniform Code of Military Justice (UCMJ) or criminal statute should not be reported via ASAP. Aircrews reporting incidents involving personal injury and/or aircraft damage should contact unit or local safety offices for appropriate guidance. The ASAP Report Submission, Fatigue Submission, and ASAP Scoreboard websites are accessible at **https://afsas.safety.af.mil/**.

CASE A. CUNNINGHAM,
Lt General, USAF
Deputy Chief of Staff, Operations

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

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None

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DAF Form 847, *Recommendation for Change of Publication*

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Abbreviations and Acronyms

AC—Aircraft Commander

ACARS—Aircraft Communications Addressing and Reporting System

ACC—Air Combat Command

ADS-B—Automatic Dependent Surveillance Broadcast

AF—Air Force

AFE—Aircrew Flight Equipment

AFH—Air Force Handbook

AFI—Air Force Instruction

AFM—Airplane Flight Manual

AFMAN—Air Force Manual

AFPD—Air Force Policy Directive

AFTO—Air Force Technical Order

AGL—Above Ground Level

AHAS—Avian Hazard Advisory System

ALEP—Aircrew Laser Eye Protection

AOC—Air Operations Center

AOR—Area of Responsibility

AOV—Area of Vulnerability

ARMS—Aviation Resource Management System

ARTEMIS—Air Resource Tool Enterprise Mission Information System

ASAP—Aviation Safety Action Program

ASDA—Accelerate-Stop Distance Available

ASRR—Airfield Suitability and Restrictions Report

ATC—Air Traffic Control

ATIS—Automatic Terminal Information Service

ATO—Air Tasking Order

A3—Director of Operations

BACN—Battlefield Airborne Communications Node

BASH—Bird/Wildlife Aircraft Strike Hazard

BMC—Basic Mission Capable

BWC—Bird Watch Condition

C2—Command and Control

CAC—Critical Action Coordination

CAOC—Combined Air Operation Center

CC—Commander

CDL—Configuration Deviation List

CMR—Combat Mission Ready

COMSEC—Communications Security

CRM—Crew Resource Management

CT—Continuation Training

CUI—Controlled Unclassified Information

DA—Decision Altitude

DAF—Department of the Air Force

DAFI—Department of the Air Force Instruction

DAFMAN—Department of the Air Force Manual

DLAE—Defense Logistics Agency Energy

DDG—Dispatch Deviation Guide

DFSP—Defense Fuel Supply Points

DH—Decision Height

DO—Director of Operations (Squadron Level)

DoD—Department of Defense

DoDI—Department of Defense Instruction

DoDM—Department of Defense Manual

EDR—Engineering Disposition Report

EFB—Electronic Flight Bag

EGPWS—Enhanced Ground Proximity Warning System

EP—Evaluator Pilot

EVS—Enhanced Vision System

FA—Flight Authorization

FAA—Federal Aviation Administration

FCF—Functional Check Flight

FCIF—Flight Crew Information File

FCOM—Flight Crew Operating Manual

FDP—Flight Duty Period

FMS—Flight Management System

FLIP—Flight Information Publications

FOD—Foreign Object Damage

FPM—Flight Path Management

fpm—Feet Per Minute

ft—Feet

GP—Guidance Panel

GPS—Global Positioning System

HAT—Height Above Touchdown

HF—High Frequency

IA—Information Automation

IAS—Indicated Airspeed

IAW—In Accordance With

ICAO—International Civil Aviation Organization

ID—Integrated Defense

IFG—In-Flight Guide

IFR—Instrument Flight Rules

IP—Instructor Pilot

KIO—Knock-It-Off

kts—Knots

lbs—Pounds

LDA—Landing Distance Available

M—Meters

MAJCOM—Major Command

MC—Mission Coordinator

MDS—Mission Design Series

MDA—Minimum Descent Altitude

MEL—Minimum Equipment List

MEP—Mission Essential Personnel

mm—millimeter(s)

MMEL—Master Minimum Equipment List

MOB—Main Operating Base

MP—Mission Pilot

NGDS—Next Generation Diagnostic System

NLT—No Later Than

OCF—Operational Check Flight

OCONUS—Outside the Continental United States

OEM—Original Equipment Manufacturer

OG—Operations Group

OPR—Office of Primary Responsibility

OPSEC—Operations Security

Ops Sup—Operations Supervisor

ORM—Operational Risk Management

PCE—Payload Control Element

PF—Pilot Flying

PIC—Pilot in Command

PLO—Payload Operator

PM—Pilot Monitoring

PMC—Partially Mission-Capable

QRH—Quick Reference Handbook

RAP—Ready Aircrew Program

RCR—Runway Condition Reading

Rev—Revision

RSI—Restriction/Special Instructions

RTO—Rejected Takeoff

RVR—Runway Visual Range

RVSM—Reduced Vertical Separation Minimums

SA—Situational Awareness

SARM—Squadron Aviation Resource Management

SDP—Special Departure Procedure

SEFE—Stan Eval Flight Examiner

SF—Standard Form

SOP—Standard Operating Procedure

SPINS—Special Instructions

SPO—System Program Office

SQ—Squadron

Stan/Eval—Standardization and Evaluation

TCAS—Traffic Collision Avoidance System

TDY—Temporary Duty

TEM—Threat and Error Management

T.O.—Technical Order

TODA—Takeoff Distance Available

TORA—Takeoff Runway Available

TOLD—Takeoff and Landing Data

UCMJ—Uniform Code of Military Justice

US—United States

USAF—United States Air Force

USSF—United States Space Force

VFR—Visual Flight Rules

VVM—Verbalize, Verify and Monitor

Office Symbols

ACC/A3—ACC/Director of Operations

ACC/A3CA—ACC/Airborne Command and Control (C2) Systems Branch

ACC/A3TV—ACC/Standardization and Evaluation Branch

AF/A34C—Command and Control Division

AFFSA/XOF—Air Force Flight Standards Agency Flight Directives Division

OG/CC—Operations Group Commander

OGV—Operations Group Stan/Eval Office

SQ/CC—Squadron Commander

SQ/DO—Squadron Director of Operations

vs—Versus

Terms

Mission Essential Personnel (MEP)—Personnel who are required for the execution of the aircraft or unit mission, to include follow-on missions. Mission essential personnel are required for the mission and may include military staff personnel; U.S. government employees; U.S. State government civilian employees or other civilians identified by a state government while operating under Title 32; government contract employees (in accordance with the terms and conditions of a current government contract); and foreign military, civilian, and contract employees (in accordance with the terms and conditions of a current government contract). Includes additional aircrew members required for follow-on missions (may be further defined in MAJCOM supplements to this publication) and personnel not authorized aeronautical orders who are tasked to perform ground support duties at enroute locations or destination points that are directly related and essential to accomplishment of the aircraft or unit mission (e.g., a specialist or technician required to provide aircraft support or a security team required to guard the aircraft).

Attachment 2

E-11 MISSION ESSENTIAL PERSONNEL (MEP) BRIEFING GUIDE

A2.1. Required Briefing Items. The PIC, or designated representative will brief the following items unless individuals have been previously briefed during the pre-mission briefing:

A2.1.1. PIC name. **(T-3)**

A2.1.2. Estimated Time of Arrival to destination. **(T-3)**

A2.1.3. Cruise altitudes. **(T-3)**

A2.1.4. Weather enroute and at destination. **(T-3)**

A2.1.5. Emergency Signals:

A2.1.5.1. Ground evacuation: **(T-3)**

A2.1.5.1.1. Signal for evacuation. **(T-3)**

A2.1.5.1.2. Primary/secondary exits. **(T-3)**

A2.1.5.1.3. Assembly area. **(T-3)**

A2.1.5.2. Crash landing/ditching:

A2.1.5.2.1. Signal for preparation. **(T-3)**

A2.1.5.2.2. Signal to brace for impact. **(T-3)**

A2.1.5.2.3. Brace position. **(T-3)**

A2.1.5.3. Loss of pressure: **(T-3)**

A2.1.5.3.1. Signal. **(T-3)**

A2.1.5.3.2. Oxygen requirements. **(T-3)**

A2.1.6. Oxygen/Survival Equipment Inspection/Usage. **(T-3)**

A2.1.7. Restrictions:

A2.1.7.1. Reading lights. **(T-3)**

A2.1.7.2. Lavatory. **(T-3)**

A2.1.7.3. Seat belts. **(T-3)**

A2.1.7.4. Smoking and smokeless tobacco are prohibited. **(T-1)**

A2.1.7.5. Operation of electric/electronic devices (except watches, handheld non-print calculators, hearing aids, medically prescribed physiological instrumentation, and portable voice recorders when approved by MAJCOM) will be IAW AFMAN11- 202V3. Electronic flash attachments will not be used. **(T-2)**

A2.1.7.6. Transportation or use of narcotics, marijuana, or other dangerous drugs is prohibited unless approved by proper medical/legal authority. **(T-1)**

A2.1.7.7. Explosive, flammable, and corrosive materials, or materials with toxic or irritating fumes are prohibited unless approved by the AC. **(T-2)**

A2.1.8. Internal Environmental Systems. **(T-3)**

A2.1.9. Discuss extreme cold temperatures that may occur in flight and ensure MEP have proper attire for the flight.