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AIR FORCE MANUAL 11-2T-1V3

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Flying Operations

T-1A OPERATIONS PROCEDURES

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This publication implements Air Force Policy Directive (AFPD) 11-2, *Aircrew Operations* and Air Force Manual (AFMAN) 11-202V1, *Aircrew Training*. It establishes the minimum Air Force standards for training and qualifying personnel performing duties in Air Force T-1A. This AFMAN applies to all Regular Air Force and Air Force Reserve pilots and Combat Systems Officers (CSOs) and all Air National Guard associate instructor pilots (IPs) operating the T-1A. This publication requires the collection and or maintenance of information protected by the Department of Defense Instruction 5400.11, *DoD Privacy and Civil Liberties Program*. The applicable system of records notice (SORN) F011 AF XO A, Aviation Resource Management System (ARMS), applies, and is available at: **http://dpclo.defense.gov/Privacy/SORNs.aspx**. Ensure all records created as a result of processes prescribed in this publication are maintained in accordance with AFI 33-322, *Records Management and Information Governance Program*, and disposed of in accordance with the Air Force Records Disposition Schedule located in the Air Force Records Information Management System **https://afrims.cce.af.mil/afrims/rims.cfm**. Refer recommended changes and questions about this publication to the office of primary responsibility (OPR) listed above using the Air Force Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate chain of command to 19th Air Force Standardization and Evaluation (19 AF/DOV). Major commands (MAJCOMs) will coordinate any proposed MAJCOM-level supplements to this volume through (19 AF/DOV) to Deputy Chief of Staff, Operations, Director of Training and Readiness (AF/A3T) prior to publication. Field units below Wing level will coordinate copies of their supplements with their parent MAJCOM OPR prior to publication. Field units below MAJCOM level will coordinate copies of their supplements with their parent MAJCOM OPR prior to publication. The authorities to waive wing/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 AFI 33-360, *Publications and Forms Management* 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 requestor's commander for non-tiered compliance items. Maintain a local copy of all approved waivers associated with this publication. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force. Compliance with the attachments in this publication is mandatory.

SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Major changes include the addition of runway condition assessment matrix (RCAM) guidance, updated performance-based navigation (PBN) guidance, new T-1A Avionics Modernization Program (AMP) guidance, updated non-towered airfield operations, updated functional check flight (FCF)/acceptance check flight (ACF) information, an updated minimum equipment list (MEL) and updated attachments. Additional changes include revisions to tiering and to convert this publication to an AFMAN.

Chapter 1

GENERAL GUIDANCE

1.1. Scope. This manual outlines aircrew procedures applicable to safe operation of the T-1A. With the complementary references cited, this manual prescribes standard operational procedures used by all aircrew operating T-1A aircraft. **(T-2).**

1.2. Roles and Responsibilities.

1.2.1. Commanders. Commanders and their respective tier levels are responsible for complying with guidance in this manual. **(T-1).** T-1A flying unit wing commanders, delegated no lower than the operations group commander (OG/CC) (or equivalent), are responsible for providing local operating guidance to supplement the requirements of this manual. **(T-2)**.

1.2.2. Pilot-In-Command (PIC) Responsibility (Aircraft Commander). The PIC is ultimately responsible for the safe and effective operation of the aircraft. **(T-2)**.

1.3. Deviations. Notwithstanding the requirements of this AFMAN, a PIC shall take action as appropriate to safely recover an aircraft in an emergency.

1.4. References. The primary references for T-1A operations are the applicable TO 1T-1A-1, *Flight Manual T-1A*; Air Education and Training Command Manual (AETCMAN) 11-247, *T-1 Flying Fundamentals;* MAJCOM specific guidance*;* and this manual. **(T-2)**.

1.5. Waivers.

1.5.1. Units will limit waivers to a maximum of one year from the effective date and will provide 19 AF/DOV info copies of all issued waivers within 72 hours of approval. **(T-2)**.

1.5.2. Units will maintain a copy of approved waivers and track the following information: Waiver type, approval authority, approval date, waiver number, and waiver expiration date. **(T-2)**.

1.6. Crew Requirements. The applicable TO 1T-1A-1 defines the minimum basic T-1A crew requirement. When an individual not fully qualified as a T-1A pilot occupies either the pilot's (left) or copilot's (right) seat a current and qualified T-1A instructor pilot (IP) must occupy the other seat with immediate access to a set of flight controls. **(T-2)**. **Exception:** Single and/or double seat changes, and to meet physiological needs. However, at no time will both the pilot and copilot's positions remain unoccupied. **(T-2)**.

1.6.1. Senior officers. Senior officers qualified using the senior officer syllabus must have a current and qualified instructor pilot at the other set of controls. **(T-2)**.

1.6.2. Combat systems officer (CSO) Sorties. The minimum crew complement will consist of a current and T-1A-qualified instructor pilot in the left seat, and a T-1A qualified, instructor CSO, upgrade CSO, or student CSO in the right seat. **(T-2)**.

1.6.2.1. Sorties in which an undergraduate CSO student occupies the right seat require a qualified T-1A instructor pilot in the left seat and a qualified or upgrading T-1A instructor CSO in the jump seat. **(T-2)**.

1.6.2.2. If an upgrading T-1A instructor CSO occupies the jump seat, a qualified T-1A instructor CSO will occupy the observer seat. **(T-2)**.

1.6.3. Break-In-Training (BIT) Sorties. See AFMAN 11-2T-1V1, *T-1A Aircrew Training.*

1.6.3.1. Pilot. The minimum crew complement will consist of two qualified T-1A aircrew members or a T-1A IP with immediate access to a set of flight controls and a rated, unqualified T-1A SUPT pilot graduate at the other set of flight controls. **(T-2)**. See AFI 11-401, *Aviation Management* and AFI 11-401 AETC Supplement, *Aviation Management,* for exceptions.

1.6.3.2. CSO. The minimum crew complement will consist of a qualified T-1A IP in the left (pilot) seat; and a rated, unqualified T-1A CSO in the right (copilot) seat and a qualified T-1A instructor CSO in the jump seat. **(T-2)**. See AFI 11-401 and AFI 11-401 AETC Supplement for exceptions.

1.6.4. Passenger-Carrying Sorties. Do not use T-code aircraft for passenger carrying missions unless dictated otherwise in AFI 11-401 and AFI 11-401 AETC Supplement. **(T-2)**. For all passenger carrying missions, ensure compliance with AFI 24-101, DODD 4500.56 and the joint forces travel regulations. **(T-2)**.

Chapter 2

MISSION PLANNING

2.1. Responsibilities. Individual crewmembers and the operations organizations share jointly the responsibility for mission planning.

2.2. General Procedures. Accomplish sufficient flight planning to ensure safe mission accomplishment. **(T-1).** See AFI 11-202V3, *General Flight Rules*, for minimum requirements.

2.3. Flight Planning Software. T-1 aircrews will use Joint Mission Planning System (JMPS) software or MAJCOM-approved software for mission planning in accordance with AFI 11-202V3.

2.4. Briefings and Debriefings.

2.4.1. Minimum Briefing Times. For student syllabus sorties, minimum briefing times are determined in accordance with the syllabus. For all other sorties (to include off-station sorties), the aircraft commander will determine the briefing time. **(T-3).** However, the minimum brief time for all sorties will be NLT 1 hour and 30 minutes prior to scheduled takeoff. **(T-3)**.

2.4.2. Briefing Guides.

2.4.2.1. The aircraft commander will brief all personnel on specific duties and responsibilities relating to safe mission accomplishment to include in-flight discipline. **(T-2).** Aircrews will reference the appropriate briefing guides, located in **Attachments 2, 3, and 4** to brief applicable items before each mission. **(T-2).** Briefing guides are a reference list of items that may apply to specific missions.

2.4.2.2. Items listed may be briefed in any sequence. Aircrew may brief items as "standard" if defined in squadron standards and understood by all participants. **(T-2).** Units may expand guides (as necessary) to cover other important items of the flight. Aircrew will brief only those items applicable to the particular mission and in sufficient detail to prevent any misunderstanding between crewmembers. **(T-2)**.

2.4.2.3. If appropriate, aircrew will brief an alternate mission for each flight. **(T-2).** The alternate mission will be less complex than the primary and should parallel the primary mission. **(T-2).** If the alternate mission does not parallel the primary mission, brief the specific mission elements that are different. **(T-2).** If practical and flight safety is not compromised, mission elements or events may be briefed airborne.

2.4.2.4. Aircrews will debrief all sorties using the debriefing guide in **Attachment 5** (or a MAJCOM-approved substitute) as a reference. **(T-2)**.

2.4.3. Unit developed checklists, In-flight Guides (IFG) and/or pilot aids. At a minimum, unit-developed checklists, IFG or aircrew aids will include the following items:

2.4.3.1. Briefing guides. **(T-2)**.

2.4.3.2. Local ultra-high frequency (UHF) and very high frequency (VHF) channelization. **(T-3)**.

2.4.3.3. Appropriate airfield diagrams. **(T-3)**.

2.4.3.4. Emergency information (for example, single runway operations, no-radio procedures, divert information). **(T-3)**.

2.4.3.5. Cross-country procedures to include command and control, airfield operations and aircraft servicing information. **(T-3)**.

2.4.3.6. Operational risk management (ORM) guides and checklists. **(T-3)**.

2.4.4. T-1A Training rules. See **Attachment 7**.

2.4.5. Low-level and Air Refueling (AR) checklists. See **Attachment 6**.

Chapter 3

NORMAL OPERATING PROCEDURES

3.1. Preflight.

3.1.1. When ground personnel are on headset during preflight activities, the primary method for communication is via ground intercom**.** When ground intercom is not used (e.g., at a fixed-based operator), aircrew will use visual signals in accordance with AFMAN 11-218, *Aircraft Operations and Movement on the Ground,* and this manual. **(T-2)**. Regardless of method used (intercom or visual), aircrew will ensure they receive proper acknowledgment from ground personnel prior to operating aircraft systems such as, but not limited to: flaps, speedbrakes, flight controls and engine start. **(T-2)**.

3.1.2. Required Publications and Equipment.

3.1.2.1. On all sorties, one aircrew member will carry a complete set of current aircraft appropriate UPT, CSO, UPT AMP or CSO AMP technical orders (specifically the applicable *Flight Manual* and *Flight Manual, Appendix 1, Performance Data).* **(T-2).** Additionally, all aircrew members will carry an aircraft applicable Pilots' Abbreviated Flight Crew Checklist, Pilots' Fanfold Checklist and unit-developed IFG. **(T-2)**. Aircrew may use MAJCOM approved electronic devices in lieu of paper publications. **Exception**: Aircrew will carry paper versions of the technical orders and Pilots' Abbreviated Flight Crew Checklist **(T-2).**

3.1.2.2. Aircrews will carry a suitable terrain chart to cover the proposed route when flying outside the local area (e.g., Visual Flight Rules [VFR], Sectional Aeronautical Chart, Operational Navigation Chart [ONC], Tactical Pilotage Chart [TPC], Joint Operations Graphics [JOG]). **(T-3)**. Squadron commanders will define the local area in unit guidance **(T-3).**

3.1.2.3. A life raft is required for overwater flight unless the only overwater portion of the flight is during the departure or approach phase or if the aircraft remains within gliding distance of land. **(T-1).** Carry life preservers onboard whenever a life raft is required. **(T-2).** Reference AFI 11-301V1, *Aircrew Flight Equipment (AFE) Program,* and applicable MAJCOM directives for specific life raft and preserver requirements.

3.1.2.4. All aircrew members will have approved flight gloves accessible while performing aircrew duties. **(T-2)**. Aircrew members will wear flight gloves during external aircraft inspection and servicing. **(T-2)**.

3.1.2.5. Individuals will only use David Clark® headsets (model H10-76) or command-approved equivalent in the T-1A. **(T-2)**. Aircrew will not use noise-cancelling headsets. **(T-2)**. MAJCOM OPRs will approve aircrew use of alternative headsets after testing in accordance with applicable military standards and certification for specific use in the T-1A. **(T-2)**.

3.1.2.6. To utilize seat cushions for comfort or seat height requirements, aircrew must successfully pass a MAJCOM approved fit check. **(T-2)**. For procedures, approved equipment, and requirements contact 19 AF Undergraduate Flying Training.

3.1.3. CSO-Modified T-1A Aircraft. Aircrews will not use the jump and instructor seat 110 Volt AC, 60 Hertz outlet and Ethernet port units for any personal electronic devices. **(T-2)**. Only use those outlets and ports for devices certified and required for use with the CSO modification. **(T-2)**.

3.1.3.1. Aircrew will utilize MAJCOM approved checklists for pre- and post-flight mission equipment setup. **(T-2)**. At a minimum, checklists will address power up and power down of jump and instructor laptops, testing of hand control units, and procedures to upload and download mission data. **(T-2)**.

3.1.3.2. Aircraft performance and navigational data displayed on CSO monitors and laptops are for training use only and not certified. Aircrew will not use this data as primary aircraft instrument or navigation sources. **(T-2)**.

3.1.4. Equipment Stowage. Clothing and personal items should be stowed aft of the jump seat. Carry larger items in the aft cabin using tie downs or secured in a passenger seat. Aircrew will not place items in front of the crew entrance door or emergency escape hatch which may delay or prohibit emergency egress from the aircraft. **(T-2)**.

3.1.5. Storage of the Jump Seat. When the crew compliment consists of two crewmembers, the aircraft commander will ensure the jump seat is locked in the stowed position (full aft and full right). **(T-2)**. Required technical orders (TOs) must be stowed within arm's reach of the seat-belted crewmembers (using the jump seat is allowed, as long as the restraint belts are used to secure the TOs). **(T-2)**.

3.1.6. Foreign Object Damage (FOD). To reduce the risk of FOD during ground operations aircraft commanders will:

3.1.6.1. Prohibit personnel from approaching the crew entrance door or allow crewmembers to open the crew entrance door when both engines are running. **(T-2)**. Personnel may enter and exit the crew entrance door with the number 2 engine operating and number one engine shut down.

3.1.6.2. Limit engine power setting during ground operations to approximately 70 percent N2 in congested areas. **(T-2)**.

3.1.6.3. Avoid prop or jet blast. **(T-2)**.

3.1.6.4. Prohibit aircrew from placing objects other than flight gloves on the flight deck glare shield to prevent scratching and abrasions to the windshield. **(T-2)**.

3.1.6.5. Ensure aircrew do not pass open containers of food or drinks over the center console, circuit breaker panel or aft CSO station console (CSO modified T-1A aircraft). **(T-2)**.

3.1.6.6. Ensure aircrew do not place objects other than flight gloves or mission planning paperwork on the horizontal CSO workstation monitor and do not utilize the monitor as a writing surface. **(T-2)**.

3.1.7. Ground Refueling. Aircrew will take the following precautions:

3.1.7.1. Do not refuel the aircraft with the engines running. **(T-2)**.

3.1.7.2. Restrict all cell phone use within 50 feet of aircraft refueling operations. **(T-1)**.

3.1.7.3. Ensure fuel anti-icing inhibitor, as required by TOs, is pre-mixed into fuel from the source (e.g., fuel truck) by qualified personnel and not manually mixed during aircraft refueling. **(T-2)**.

3.2. Fuel Requirements.

3.2.1. The T-1A should normally take off with a full fuel load from the home field. The aircraft commander will decide whether to take off at the home field or out base with less than a full fuel load. **(T-2)**. Factors to consider will include weight and balance, mission requirements, aircraft performance, weather conditions, fuel requirements and fuel conservation. **(T-2)**.

3.2.2. Minimum fuel for the T-1A is 500 pounds. **(T-2)**.

3.2.3. Emergency fuel for the T-1A is 300 pounds. **(T-2)**.

3.2.4. Declare "minimum" or "emergency fuel" to the controlling agency any time it becomes apparent the fuel remaining at final touchdown will be less than required. **(T-2)**. After declaring minimum or emergency fuel, add the fuel status call and amount of fuel remaining (in minutes) to each new air traffic control facility. **(T-2)**.

3.2.5. Aircrews must be aware that minimum fuel for landing may be greater than minimum/emergency fuel to ensure aircraft center of gravity limitations are not exceeded in some configurations or aircrew and/or passenger and/or cargo complements. If the aircraft DD Form 365-4, *Weight and Balance Clearance Form F –Transport,* (form F) requires fuel to be in the tank to remain within center of gravity, crews will not plan on using this fuel for the planned sortie. Example: If the form F requires that 247 pounds be on board to remain within landing center of gravity, then the crew will have a new minimum fuel of 747 pounds and new emergency fuel of 547 pounds. **(T-2)**.

3.3. Performance Requirements.

3.3.1. Aircrew will comply with AFMAN 11-202V3.

3.3.2. The aircraft commander will ensure the aircraft will meet the required climb gradient. **(T-2)**. The required climb gradient may be reduced in accordance with AFMAN 11-202V3.

3.3.3. The minimum climb-out factor for all takeoffs is 2.5. (**T-2)**. Reference TO 1-T-1A-1-1, *Flight Manual, Appendix 1, Performance Data, T-1A,* for climb-out calculations.

3.3.4. Reference Zero will occur no later than the departure end of the runway for all initial takeoffs and touch-and-go departures. **(T-2)**.

3.4. Taxiing.

3.4.1. Obstacle Clearance. When obstacles affect only one wingtip, a marshaller may also act as the wing walker and direct the aircraft while monitoring the affected wingtip. **(T-3)**. This requirement does not apply at the home station when fixed taxi routes are marked and provide a minimum of 10 feet of wingtip clearance from obstacles and other aircraft.

3.4.2. Taxi Interval. Do not taxi staggered and maintain a minimum of 150 feet behind other aircraft while taxiing. **(T-2)**.

3.4.3. Ice and/or Snow Conditions. Do not taxi during ice and/or snow conditions until all portions of the taxi route and runway are safe and an acceptable runway condition is given. **(T-2)**.

3.4.3.1. With ice or snow present, taxi on centerline with a minimum of 300 feet of spacing behind other aircraft. **(T-2)**.

3.4.3.2. For removal of snow and ice, refer to the aircraft TO guidance and TO 42C-1-2, *Anti-icing, De-icing, and Defrosting of Parked Aircraft.* **(T-2)**.

3.5. Runway. Compute the minimum usable runway for takeoff, touch-and-go and landing between arresting cables located on or above the runway surface. **(T-2)**.

3.5.1. The minimum runway length for T-1A takeoffs is 6,000 feet. **(T-3)**. However, it will in no case be lower than critical field length (CFL) or the distance required to reach reference zero whichever is greater. **(T-2)**. **Exception:** Reference Zero calculations may take into account runway distance past a departure end arresting cable, however in no case may "Reference Zero" occur past the departure end of the runway. **(T-2)**.

3.5.2. The minimum runway length for full-stop landings is 6,000 feet. **(T-3)**. However, it will in no case be lower than computed landing distance. **(T-2)**. If a runway has landing distance available (LDA), aircrew will use LDA for the minimum runway length calculations and comply with appropriate waiver tiering above. **(T-2)**. If the tabular data landing distance is not within 1,000 feet of runway available, aircrews may use tabular data landing. If the tabular data landing distance is within 1,000 feet of the total usable runway for landing, aircrews will use the longer of the performance chart or tabular data landing distance. **(T-2)**.

3.5.3. The minimum usable runway length for touch-and-go landings is 6,000 feet. **(T-3)**. Additionally, minimum usable runway length must be equal to or greater than the applicable touch-and-go distance. **(T-2)**. **Note**: See TO 1T-1A-1-1**,** *Flight Manual – Appendix I, Performance Data T-1A,* for touch-and-go distances for 15,500 to 12,000 pounds gross weight.

3.5.3.1. Touch-and-go distances reflect the most restrictive of the go or stop option from the appropriate decision point (flaps and throttles). From these points, the applicable touch-and-go distance allows acceleration, rotation, and climb to Reference Zero by departure end, or deceleration to stop within the runway remaining. For airfields with declared distances as defined in AFMAN 11-202V3, aircrews will use the shortest of Take-Off Runway Available (TORA), Accelerate-Stop Distance Available (ASDA) or LDA to determine the usable runway length for touch-and-go landings. **(T-2)**.

3.5.3.2. Touch-and-go 30-flap and 10-flap landings may be accomplished at 41 and 42 degrees Celsius if all of the following conditions are met (no-flap touch-and-go landings are not authorized above 40 degrees):

3.5.3.2.1. Aircraft gross weight is 14,000 pounds or less.

3.5.3.2.2. Field pressure altitude is 3,000 feet or less.

3.5.3.2.3. Runway is dry.

3.5.3.2.4. The shortest of TORA, ASDA, or LDA is greater than 9,000 feet.

3.5.4. Minimum runway width for single-ship takeoffs and landings is 100 feet. **(T-3)**.

3.5.5. Minimum runway width for normal formation takeoffs is 150 feet. **(T-3)**.If the runway is less than 150 feet wide, use the feed-on procedure for takeoff as described in AETCMAN 11-247. The minimum runway width for feed–on takeoffs is 100 feet. **(T-3)**.

3.5.6. Takeoffs, landings and touch-and-go's will not be accomplished on unplowed runways when ice or snow is present. **(T-3)**. Operations on plowed runways is acceptable provided the plowed portion is a minimum of 100 feet wide and meets the minimum length requirements. **(T-3)**. Additionally, the runway condition of the plowed surface must be equal an RCR of 12 or greater. **(T-3)**.

3.5.7. Runway Condition Assessment Matrix (RCAM). RCAM is located in the Flight Information Handbook (FIH). When necessary, aircrew will use the RCAM to derive the Runway Condition Reading (RCR) and associate information (i.e Runway Surface Condition, pilot reported braking action, etc.) from the Runway Condition Code (RCC) described in published Field Condition (FICON) Notice to Airmen (NOTAM). **(T-2)**.

3.5.7.1. Aircrew will use the lower of RCC, pilot reported braking action or RCR. **(T-2)**.

3.5.7.2. Aircrew will consider a Runway Condition Code (RCC) of 3 as a Runway Condition Reading (RCR) of 10. **(T-2)**.

3.6. Crosswind Limitations. The maximum crosswind limitation for takeoff and landing is 25 knots for a dry runway, 15 knots for a wet runway, and 10 knots for an icy runway. **(T-2)**.

3.7. Spacing.

3.7.1. Takeoff. Do not begin the takeoff roll until preceding aircraft are airborne or clear of the runway. **Exception:** Does not apply to the wingman during 15-second interval formation takeoffs. **(T-2)**.

3.7.2. Landing. For reduced same runway separation (RSRS) reference AFI 13-204V3_AETCSUP, *Airfield Operations Procedures and Programs*, and local supplement.

3.8. Low Approach. During low approaches, do not allow the aircraft to touch down. **(T-0)**. A restricted low approach is no lower than 500 feet above ground level (AGL) or as directed by the controlling agency. Minimum altitude to initiate a practice single-engine go-around or single-engine low approach is 100 feet AGL. **(T-2)**.

3.9. Traffic Patterns:

3.9.1. Tactical Pattern. A tactical pattern is one turn to downwind and one turn to final either from initial or the closed pull up. Do not accomplish single-engine and no-flap tactical patterns (simulated or actual). If necessary to configure during the break, establish the desired angle of back prior to any configuration change. The minimum speed in the break is 160 knots indicated airspeed (KIAS). **(T-2)**.

3.9.2. Closed Pattern (Tactical or Rectangular). The minimum airspeed to begin the closed pull-up is 160 KIAS. **(T-1)**. Maintain 160 KIAS minimum during the pull-up. **(T-1)**. On downwind, maintain minimum speeds for fuel weight and configuration. **(T-2)**.

3.10. Touch-and-go:

3.10.1. Touch-and-go operations require a qualified IP at a direct set of controls. **(T-2)**.

3.10.2. Touch-and-go operations are prohibited with an undergraduate or BIT CSO (see AFMAN 11-2T-1V1, definition) at a direct set of controls, regardless of IP presence. **(T-2)**.

3.11. Delayed Braking:

3.11.1. Delayed braking is defined as the time and/or distance between aircraft touchdown or initiating an abort and brake application. Although utilized to reduce brake energy, *delayed braking increases landing distance significantly.*

3.11.2. Do not let concern over brake energy override good judgment in stopping the aircraft. Apply the brakes based on the runway remaining, not on hot brakes speed. **Note**: Charted stopping distances do not account for possible decreased braking effectiveness due to rubber deposits, especially when wet.

3.11.3. The ability to delay braking during an abort is dependent upon several factors (e.g., aircraft speed, runway remaining, RCR, inoperative aircraft systems, tailwind component, etc.). Upon initiating an abort, if any doubt exists as to whether the aircraft will stop in the confines of the runway, immediately apply maximum braking until the aircraft has slowed to a safe taxi speed. As a guide, do not delay braking if the runway remaining is less than RCR-corrected CFL. **(T-2)**.

3.11.4. When landing, do not delay braking when runway remaining is less than the RCR corrected landing distance. **(T-2)**. Refer to TO 1T-1A-1-1 for additional assumptions concerning landing distance and landing ground roll distance calculations. If any doubt exists as to whether the aircraft will stop in the runway remaining, immediately apply maximum braking until the aircraft has slowed to a safe taxi speed. **(T-2)**.

3.12. After landing. Do not perform any after landing checklist items until the aircraft is clear of the active runway. **Exception:** Aircrew may stow the speed brakes for more effective steering at the discretion of the aircraft commander when exiting the runway. **(T-2)**.

3.13. Maneuvering Parameters and Restrictions.

3.13.1. **Critical Phases of Flight.** The following flight regimes are critical phases of flight:

3.13.1.1. Takeoffs and landings. **(T-2)**.

3.13.1.2. Traffic pattern operations after initiating the base turn (instrument or visual). **(T-2)**.

3.13.1.3. Low-level navigation (below 1,000 feet AGL). **(T-2)**.

3.13.1.4. Precontact and contact positions. **(T-2)**.

3.13.1.5. Airdrop maneuver (IP to target). **(T-2)**.

3.13.2. CSOs will only perform pilot monitoring duties. **(T-2)**. **Exception**: CSOs are authorized taxi to accomplish the "Taxi" checklist. Additionally, CSOs in CSO right seat (CRS) initial qualification training, and I-1s, may fly autopilot coupled approaches with an IP in the left seat. These CSOs will adhere to the following restrictions:

3.13.2.1. CSOs will only fly with the autopilot engaged. **(T-2)**.

3.13.2.2. Minimum weather for CSO-flown autopilot coupled instrument approaches is a ceiling of 700 feet and visibility of 2 statute mile (SM), or approach minimum weather, whichever is greater. **(T-2)**.

3.13.2.3. During autopilot coupled instrument approaches the CSO will initiate transfer of aircraft control to the pilot no later than 100 feet above approach minimums and no later than the missed approach point, but in no case lower than 300 feet above touchdown zone elevation (TDZE) or airfield elevation (approaches terminating in a circle). **(T-2)**.

3.13.2.4. CSOs are prohibited from flying the aircraft below 1,000 feet AGL unless being radar vectored for an instrument approach procedure (IAP), cleared direct the initial approach fix for an IAP, or established on a segment of the approach. **(T-2)**.

3.13.2.5. CSOs are prohibited from controlling the aircraft during visual traffic pattern operations, go-around and/or missed approach and circling to land procedures and will only perform pilot monitoring duties. **(T-2)**.

3.13.2.6. CSOs are prohibited from controlling the aircraft during takeoffs and landings (to include touch-and-goes) and will only perform copilot or pilot monitoring duties. **(T-2)**.

3.13.3. Cruise Checklist. If actual cruise time will be a short duration (approximately 15 minutes), the cruise checklist does not have to be accomplished. Aircrews transiting between airfields located in close proximity to each other (approximately 15 minutes) and remaining below transition level, may accomplish the pattern checklist in lieu of the after-takeoff, climb, cruise, descent, and before-landing checklists. **(T-2)**.

3.13.4. Transfer of Aircraft Control. At all times**,** crew members must know who has control of the aircraft. Transfer of aircraft control will be made with the statement "pilot (or copilot), you have the aircraft." The individual receiving control of the aircraft will acknowledge "pilot (or copilot) has the aircraft." The individual assuming control of the aircraft will maintain control until relinquishing it as stated above. **(T-2)**. **Note**: Crew members occupying the jump seat are prohibited from manipulating the autopilot controls or throttles. **(T-2)**.

3.13.5. Crew Seat Change Procedures:

3.13.5.1. The minimum altitude for seat changes is 1,000 feet AGL. **(T-2)**. Do not accomplish seat changes during a critical phase of flight. **(T-2)**.

3.13.5.2. Crew seat changes on the ground will not be performed with the engines running unless there is a pilot at the controls at all times to guard the brakes. **(T-2)**. Additionally, once the engines are running, do not perform seat changes with only two crewmembers on board the aircraft. **(T-2)**.

3.13.5.3. At the discretion of the aircraft commander, CSOs may unstrap shoulder harnesses when occupying the jump seat and aft crew seats to facilitate training during continuation training sorties and the low-level portion of formal training syllabus.

3.13.6. Weather and Altitudes Restrictions:

3.13.6.1. Minimum altitude for visual flight routes (VFR) point-to-point navigation is 3,000 feet AGL. **(T-2)**. Aircrew may descend below 3,000 feet AGL as required for

low-level entry/VFR arrival. Do not descend outside of the area covered by the low-level or VFR arrival chart. **(T-3)**. Charts will have applicable vertical obstruction data if flying below 3,000 feet AGL. **(T-2)**.

3.13.6.2. Complete approach to stalls, traffic pattern stalls, slow flight, unusual attitudes, practice lost wingman, and flight characteristic demonstrations above 5,000 feet AGL. **(T-2)**.

3.13.6.3. Approach to stalls, traffic pattern stalls, slow flight, unusual attitudes, steep turns, practice lost wingman, and flight characteristics demonstrations will be conducted in day time only, clear of clouds, and 3 SM of in-flight visibility. **(T-2)**.

3.13.6.4. Simulated air refueling requires visibility of 1 SM and clear of clouds. **(T-2)**.

3.13.7. Stalls. Do not practice approach to stalls or traffic pattern stalls beyond the stick shaker. **(T-2)**. **Note**: A qualified IP must be at a direct set of controls for all practice approach to stall or traffic pattern stall training. **(T-2)**.

3.13.8. Asymmetrical Thrust Demonstration. The yaw damper may be on or off. Perform the high speed maneuver at approximately 220 KIAS and the low speed portion at approximately 150 KIAS. **(T-2)**. Calculate and use a maximum continuous thrust (MCT) to avoid over boosting the engines. **(T-2)**.

3.13.9. Yaw Damper Failure Demonstration. Conduct the demonstration below flight level (FL) 280. **(T-2)**.

3.13.10. Unusual Attitudes. Aircrew will:

3.13.10.1. Initiate recoveries above 130 KIAS and below 270 KIAS and will not exceed 45 degrees angle of bank. **(T-2).**

3.13.10.2. Limit pitch attitudes to 25 degrees nose up and 20 degrees nose down. **(T-2).**

3.13.10.3. Calculate and use a MCT to avoid over boosting the engines. **(T-2)**.

3.13.11. Bank Angles. Pilots should adjust pattern spacing as to not exceed 30 degrees of bank in the final turn or on final. Pilots will not exceed 45 degrees of bank (except for minor deviations or in cases of safety of flight) anywhere in the traffic pattern, to include the break during tactical overhead patterns. **(T-2)**. If exceeding 45 degrees of bank, aircrew will acknowledge the deviation and make an immediate corrective action. **(T-2)**.

3.13.12. No-Flap Landings. Do not practice no-flap full-stop landings. **(T-2)**.

3.13.13. Circling Approaches. Do not practice single-engine circling approaches or single-engine low-closed patterns. **(T-2)**.

3.13.14. Simulated Dual Engine Flameout Patterns. Do not practice simulated dual engine flameout patterns. **(T-2)**.

3.14. Night Operations.

3.14.1. Night Prohibited Maneuvers. In addition to the maneuvers previously addressed, the following items are prohibited at night:

3.14.1.1. Formation. **(T-2)**.

3.14.1.2. Low-level navigation. **(T-2)**.

3.14.2. Taxiing. Taxi spacing will be a minimum of 300 feet and on taxiway center line. **(T-2)**. The landing/taxi lights will normally be used during all night taxiing. **(T-2)**. **Exception:** Aircrew may turn off landing and/or taxi lights when they might interfere with the vision of the pilots of an aircraft landing/taking off or if it interferes with marshallers. If safety is a concern, pilots will bring the aircraft to a complete stop. **(T-2)**.

3.14.3. Pattern Restrictions. Night VFR rectangular patterns, tactical patterns, visual straight-in approaches and circling approaches may be flown with the following restrictions:

3.14.3.1. Simulated single-engine and no-flap approaches and patterns, as well as, circling approaches may be flown at night. The ceiling and visibility must be at least 2,000 feet and 3 SM or circling minimums, whichever is greater. **(T-2)**.

3.14.3.2. Fields used for this training must be familiar; that is, instructors must have accomplished either T-1A daylight VFR pattern operations or a daylight circling approach at the airfield prior to night operations. **(T-2)**.

3.14.3.3. Visual or instrument glide path guidance (including global positioning system (GPS) vertical navigation received from a published area navigation (RNAV) instrument approach) must be available and used for all off-station night landings. **(T-2)**.

3.14.4. Filing:

3.14.4.1. Night operations require the filed destination and alternate (when required) to have an operable straight-in approach and glide path guidance. Acceptable forms of glide path guidance are visual lighting systems, precision guidance systems, and GPS vertical navigation retrieved from a published RNAV instrument approach.

3.14.4.2. Aircrew may perform enroute instrument approach work at facilities without glide path guidance, but may not descend below the minimum descent altitude (MDA). **(T-2)**. **Note**: For landing out of night circling approaches, the only runway required to have glide path guidance is the runway of intended landing. **(T-3)**

3.14.5. Lighting. If requested by runway supervisory unit (RSU) controllers or the air traffic control (ATC) tower, aircrews may turn off strobe lights during the hours of darkness while in the home base traffic pattern.

3.15. Weather and Instrument Flight Rules (IFR):

3.15.1. Weather Restrictions:

3.15.1.1. The T-1A will not be flown in areas of forecast or reported severe turbulence, severe icing, freezing rain, or freezing drizzle. Aircrew will notify the appropriate weather personnel or ATC if encountering severe icing or turbulence on a mission. **(T-2)**.

3.15.1.2. Do not cruise or conduct multiple pattern operations in actual moderate icing conditions. **(T-2)**.

3.15.1.3. If required weather minimums cannot be maintained during a low-level, abort the route. **(T-2)**.

3.15.1.4. Do not exceed 30 degrees of bank in instrument meteorological conditions (IMC) unless safety of flight dictates otherwise. **(T-2)**.

3.15.1.5. Aircrews will utilize all means necessary (ATC, WX radar, PIREPS, supervisor of flying) to avoid thunderstorms by 20 NM at or above FL 230 and 10 NM below FL 230. **(T-2)**.

3.15.2. Filing: in accordance with AFMAN 11-202V3, AFI 11-202V3_AETCSUP, *Flying Operations*, and this publication.

3.15.2.1. Destination. Do not file to a destination unless the ceiling *and* visibility for the estimated time of arrival (ETA) (plus or minus 1 hour) is at or above the appropriate suitable published minimums. **(T-2)**.

3.15.2.2. If two or more suitable alternate airfields are available, aircrews may file flight plans to the home field when the forecasted terminal weather is be below published landing minimums. If this exception is used, aircrews will compute divert fuel for the most distant alternate. **(T-2)**.

3.15.3. Takeoff:

3.15.3.1. Minimums. Pilots will utilize ceiling *and* visibility to determine adequate departure weather. **(T-2)**. Home station departures will utilize existing weather and the forecast for planned landing plus 1 hour. **(T-2)**. Off-station departures will utilize existing weather at takeoff time. **(T-2)**.

3.15.3.2. IFR Departures. In addition to the approved IFR departure methods outlined in AFMAN 11-202V3 and AFI 11-202V3_AETCSUP, aircrew members fly published Visual Climb Over Airport (VCOA) with the following restrictions:

3.15.3.2.1. Pilots must completed MAJCOM-approved training prior to flying published VCOAs. **(T-2)**.

3.15.3.2.2. Pilots will ensure airspeeds during maneuvering are appropriate for aircraft configuration and bank angle. **(T-2)**. Target airspeed during VCOA departure is 180 KIAS. **(T-2).**

3.15.4. Penetration and Approach. During actual IMC, a precision approach (instrument landing system [ILS] or precision approach radar [PAR]) monitored by surveillance radar is the preferred approach. This does not prevent instrument training for other types of approaches if the ceiling and visibility are at or above required minimums for the approach.

3.16. GNSS Navigation:

3.16.1. The T-1A is Global Navigation Satellite System (GNSS)-equipped and meets the requirements for IFR GPS operations in the National Airspace System (NAS) Federal Aviation Administration (FAA)-controlled airspace and is approved for RNAV 1 terminal (departure and arrival) and RNAV 2 en route operations ("T" and "Q" routes) (see applicable TO 1T-1A-1 for aircraft certification information). T-1A aircrews may use GPS as the primary navigational source for all IFR operations from terminal departure through en route navigation to non-precision approach provided the aircraft contains a current Jeppesen® database.

3.16.1.1. AMP Aircraft meet Technical Standard Orders and comply with Advisory Circular 90-107, *Guidance for Localizer Performance with Vertical Guidance (LPV) and*

Localizer Performance without Vertical Guidance (LP) Approach Operations in the U.S. National Airspace System, when using the wide-area augmentation system (WAAS).

3.16.1.2. Excluding WAAS, the use of GNSS signals other than GPS or Galileo is prohibited and shall not be enabled within the aircraft avionics. **(T-2).**

3.16.1.3. Within continental United States airspace, some conventional IAPs are combined with PBN segments as a means of integrating conventional and performance based procedures (e.g., the "GPS/ILS" or "hybrid" approaches). Flight on these PBN segments to the conventional approach final is acceptable provided:

3.16.1.3.1. The conventional IAP is loaded from a current Flight Management System (FMS) database and not altered. **(T-0)**. If the FMS has stripped any of the PBN waypoints, do not fly the PBN segment. **(T-0)**. Do not manually enter individual points into the procedure. **(T-0)**.

3.16.1.3.2. Aircrew will check predictive Receiver Autonomous Integrity Monitoring (RAIM) utilizing the aircraft FMS prior to the approach. **(T-2)**. Do not fly the PBN segment of the IAP if RAIM is unavailable. **(T-2)**. During the PBN segments (departure, enroute, arrival, terminal or approach) aircrew will monitor the FMS, electronic attitude director indicator (EADI) or primary flight display (PFD), and control display unit (CDU) for messages during these segments. **(T-2)**. Some CDU messages require termination of the approach and coordination with ATC for an alternate clearance or execution of alternate missed approach. For a list and description of messages see appropriate TO 1T-1A-1. Aircrews will coordinate for an alternate clearance anytime FMS/GPS integrity is in doubt. **(T-2)**.

3.16.1.3.3. Aircrew will compare the PBN legs to the charted distances (0.1 nm allowable error) and apply **paragraph 3.16.6.4** guidance to these PBN segments. **(T-2)**. **Exception**: AMP aircraft PFD displays distances in tenths of a mile and meet AFMAN 11-202V3 requirements. **(T-2)**.

3.16.1.3.4. When flying these PBN segments the FMS must be in terminal mode. **(T-2)**. **Exception:** There are certain feeder routes (or terminal arrival areas) within the NAS that exceed 30 nm from the airport reference point. Aircrew may operate on these segments with the FMS in enroute sensitivity as these procedures are explicitly designed utilizing enroute criteria. Once inside the 30 nm radius of the arrival airport, ensure the FMS has correctly sequenced to terminal accuracy. **(T-2)**.

3.16.1.3.5. Aircrew will always simultaneous display the PBN segment and conventional ILS/localizer course within the cockpit. **(T-2)**. Accomplish this to minimize the risk of undershooting or overshooting the final approach course when navigating off the PBN segment and onto the ILS/LOC final approach course. Once established on the final approach course and prior to the final approach fix (FAF), the pilot flying (PF) will transition their instruments over to the conventional ILS/LOC approach. **(T-2)**.

3.16.1.3.6. The flight director or autopilot will be used for these PBN segments in accordance with Advisory Circular 90-100A, *U.S. Terminal and En Route Area Navigation (RNAV) Operations*. **(T-2)**. Once off the PBN segment and onto the

conventional ILS/LOC final approach course, aircrew may begin hand flying with or without the flight director as desired.

3.16.1.3.7. The T-1A may also conduct TAAs utilizing the above procedures. Normally, TAA ILS/LOC approaches have the note stating "GPS REQUIRED FOR TERMINAL ARRIVAL AREA" and will have the initial approach fix or intermediate fix identified using the waypoint symbol. Design criteria of these TAAs may vary, but will always incorporate a holding-in-lieu of procedure turn. Aircrew will use the flight director or autopilot for the TAA segment. **(T-2)**. Once established on the final approach course (i.e., from a basic "T" design) or departing the hold of the HILO PT, aircrew may turn off the autopilot and/or flight director as desired.

3.16.2. T-1A aircrews will check Jeppesen® NAVDATA Alerts/Change Notices to Airmen (NOTAM) prior to every flight in which the Jeppesen® database will be utilized. **(T-2)**. **Note**: Unit standardization and evaluation organizations will review the Jeppesen® exclusions report for applicability to local operations located at **https://www.rockwellcollins.com/Services-and-Support/Database-and-Software-Updates/Navigation-Databases/Database-Alerts-and-Certifications.aspx**. **(T-3)**

3.16.3. The flight director will be utilized for all RNAV operations in which GNSS is the primary navigation source. **(T-2)**. Autopilot use is highly encouraged. Aircrews will maintain route and course centerlines for all PBN operations. **(T-0)**.

3.16.4. MAJCOM review and approval of the Jeppesen® database is required for IFR operations outside the NAS. **(T-2)**. **Note**: European Geostationary Navigation Overlay Service (EGNOS) is not approved for OCONUS operations. **(T-2)**.

3.16.5. Receiver Autonomous Integrity Monitoring (RAIM).

3.16.5.1. Preflight Planning. Aircrew will check predictive RAIM and review GPS outage NOTAMS prior to utilizing RNAV procedures. **(T-2)**.

3.16.5.1.1. If RAIM is not available along the planned or actual route of flight for more than 5 continuous minutes, aircrews will alter routing or plan the flight utilizing traditional navigational sources. **(T-2)**.

3.16.5.1.2. If predictive RAIM forecasts an outage, weather must allow for a VFR arrival, approach, and landing in accordance with AFI 11-202V3.

3.16.5.2. Aircraft Operations. Aircrews will check predictive RAIM utilizing the aircraft FMS prior to:

3.16.5.2.1. Takeoff for any RNAV/GPS departure procedure (DP). **(T-2)**.

3.16.5.2.2. Commencing any RNAV/GPS standard terminal arrival (STAR) or RNAV/GPS instrument approach procedure. **(T-2)**.

3.16.6. RNAV (GPS) Instrument Approach. "DME/DME" and "WAAS" notations on published "RNAV" instrument procedures are not applicable to the T-1A. If a published RNAV procedure requires either, and has no provision for GNSS or GPS, T-1A aircrew may not file or fly the procedure. **(T-2)**. Additionally, aircrew will not fly RNAV (RNP) approaches. Suitable procedures for the T-1A will state "GPS Required" or "GNSS." **(T-2)**.

Exception: Crews operating AMP aircraft may utilize WAAS notations on RNAV instrument procedures. **(T-2)**.

3.16.6.1. The T-1A is certified for circling, lateral navigation (LNAV) MDA, and LNAV/vertical navigation (VNAV) decision altitude (DA) minima for RNAV approaches. The T-1A is not WAAS-equipped, therefore aircrew will not use: "GLS" or "LPV" minimums. **(T-2)**. **Exception**: Crews operating AMP aircraft may utilize LPV minimums. **(T-2)**.

3.16.6.2. Aircrews will closely monitor the EADI/PFD (as applicable) and CDU for FMS messages during RNAV approaches. **(T-2)**. See applicable TO 1T-1A-1 for message descriptions. Aircrews will coordinate for an alternate clearance anytime FMS/GPS integrity is in doubt. **(T-2).**

3.16.6.3. The T-1A FMS utilizes an uncompensated barometric-vertical navigation (BARO-VNAV) aiding system. Cold temperature limitations apply to T-1A RNAV (GPS) approach operations as specified in AFMAN 11-202V3. Additionally, aircrews may not descend to LNAV/VNAV or LPV minimums with remote altimeter settings. **(T-2).** See AFMAN 11-202V3 for additional guidance.

3.16.6.4. Since the T-1A CDU does not display RNAV instrument approach segment distances in tenths of a mile and to meet the requirements of AFMAN 11-202V3, aircrews will ensure that once established on the unverified segments of the approach, the EHSI/PFD (as appropriate) distances are evaluated to ensure an appropriate published charted value. **(T-2)**. If the value is appropriate based on current aircraft position, crews may continue the approach. Treat deviations from expected values conservatively and crews will abort the approach if the evaluated distance does not correspond to within 0.1 nm of the FLIP published value. **(T-2)**. **Exception**: AMP aircraft PFD displays distances in tenths of a mile and meet AFMAN 11-202V3 requirements. **(T-2)**.

3.16.6.5. Depending upon RNAV approach procedure coding, in rare instances the T-1A FMS may strip "step down" waypoint fixes from the J3/J8-America databases which are located along the intermediate approach segment. Flying these approaches is acceptable provided that the only change at the stripped waypoint is an altitude and the aircrew can identify the point through an alternate means (e.g., nm distance to the FAF). **(T-2)**. Do not manually insertion a waypoint into the approach. **(T-2)**.

3.16.7. RNAV 1 Terminal Procedures. The T-1A is certified for FLIP *published* RNAV 1 [1 nm total system error (TSE)] DPs and RNAV 1 STARs. RNAV DPs and STARS are RNAV 1 unless depicted otherwise. Some RNAV 2 procedures exist within the NAS, and aircrews may fly these procedures using RNAV 1 guidance. Retrieve RNAV DPs and STARs, in their entirety, by procedure name from the FMS database and select the proper departure or arrival runway. **(T-2)**. Do not manually enter waypoints using latitude/longitude or place/bearing. **(T-2)**.

3.16.7.1. Since RNAV 1 procedures require lateral deviation of no more than 0.5 nm, aircrews must not exceed one dot on the course deviation indicator (CDI) of the EHSI/PFD (approximately 0.5 nm) while in the "Terminal Mode," while selecting FMS as the navigation source and flight director set to "NAV." **(T-2)**. Additionally, aircrews

should monitor cross track utilizing the multi-function display (MFD) or CDU "Progress" page. **(T-2)**. **Note**: See applicable AMP flight manual for equivalent messages.

3.16.7.1.1. Some RNAV 1 terminal procedures may begin or terminate outside of the FMS "Terminal Mode" 30 nm area. In these instances, one dot displacement on the CDI will not approximate the required RNAV 1 lateral accuracy. **(T-2)**.

3.16.7.1.2. Any time a segment of an RNAV 1 terminal procedure is flown outside of the 30 nm "Terminal Mode" area, aircrews *must* monitor cross track utilizing the MFD or CDU to ensure the aircraft remains within the 0.5 nm lateral tolerance of the RNAV 1 routing. **(T-2)**. **Note**: See applicable AMP flight manual for equivalent messages.

3.16.7.2. Course difference of up to 3 degrees is acceptable when comparing FMS loaded RNAV 1 departure or arrival procedures (RNAV STARS and standard instrument departures) from the aircraft database to the FLIP published courses. **(T-2)**.

3.16.7.3. During RNAV 1 DPs, aircrews *will* select "NAV" on the flight director as soon as practical after takeoff to ensure lateral RNAV guidance is available and followed. **(T-2)**.

3.16.8. RNAV 2 En Route Procedures. The T-1A is certified for FLIP *published* RNAV 2 (2 nm TSE) enroute operations in Required Navigation Performance airspace ("Q" or "T" designated routes found in FLIP). FLIP will depict and identify these procedures on FLIP as "RNAV 2." Whenever possible, RNAV 2 routes should be extracted from the FMS database, in their entirety, by inserting the starting and ending waypoints and utilizing the route name in the "VIA" line of the flight plan pages of the CDU. Selecting and inserting individual, named fixes from the database is permitted utilizing the "TO" lines, however *all fixes* along the published route to be flown *must* be inserted. **(T-2)**. Do not manually enter waypoints using latitude/longitude or place/bearing. **(T-2)**.

3.16.8.1. Since CDI lateral deviation is automatically set by the FMS to 5 nm outside of the 30 NM terminal area, aircrews *must* monitor cross track utilizing the MFD or CDU to ensure the aircraft remains within the 1.0 nm lateral tolerance of the RNAV 2 routing. **(T-2)**. **NOTE**: See applicable AMP flight manual for equivalent messages.

3.16.8.2. Course difference of up to 3 degrees is acceptable when comparing the FMS loaded RNAV 2 route from the aircraft database to the FLIP published courses. **(T-2)**.

3.17. Low-Level. Aircrew will utilize the checklist procedures outlined in **Attachment 6** in addition to the following:

3.17.1. Weather. Comply with VFR cloud clearance requirements in AFI 11-202V3. For published slow routes (SR) and instrument routes (IR), aircrew will ensure a minimum ceiling and visibility of 1,500 feet and 3 sm. **(T-2)**. For visual routes (VR) see AFMAN 11-202V3. **(T-2)**.

3.17.2. Ground Speed. Planned ground speeds on military training routes are 210 knots (SR) and 240 knots (IR/VR). **(T-2)**. Maximum planned ground speed is 270 knots. Aircrews should avoid actual ground speeds exceeding 300 knots. Maximum KIAS on a slow speed training route (SR) is 250 KIAS. **(T-2)**.

3.17.3. Altitudes and Obstacle Clearance. Plan altitudes which provide adequate terrain and obstacle clearance. **(T-2)**.

3.17.3.1. The minimum allowable altitude on all low-levels is 500 feet above the highest terrain or obstacle, unless specified higher in FLIP, within 2,000 feet of the aircraft. **(T-2)**.

3.17.3.2. Towers and other manufactured obstacles are more difficult to see than high terrain. Aircrew will fly a minimum of 500 feet above the highest unseen obstacle within 2 NM of the aircraft. **(T-2)**. Once the obstacle is visually acquired, aircrews will fly a minimum of 500 feet above *or* laterally avoid the obstacle by a minimum of 2,000 feet. **(T-2)**.

3.17.4. Maneuvering. During low-level operations, aircrews will not exceed 45 degrees of bank unless required for safety of flight. **(T-2)**.

3.17.5. Daylight Restrictions**.** Enter the route no earlier than 30 minutes after sunrise (1 hour for mountainous terrain) and exit the route no later than 30 minutes prior to sunset (1 hour for mountainous terrain). See AFMAN 11-202V3 and/or Title 14 Code of Federal Regulations, **Part 95**.11, Subpart B, for the areas designated as mountainous terrain. **(T-2)**.

3.18. Airdrop.

3.18.1. Altitude. Perform the simulated airdrop maneuver at a minimum of 1,000 feet AGL or 500 feet above the planned route altitude. **(T-2)**. When accomplished in a military operating area (MOA), flight lead will determine an appropriate altitude. Whenever a flight path conflict with lead exists, wingman will attempt to cross high in relation to lead. **(T-2)**. On the route, wingman will never fly below lead or 500 feet AGL, whichever is higher, unless safety dictates otherwise. **(T-2)**. **Exception:** Wingman may fly below lead's altitude during a climbing egress from a simulated airdrop or during route exit. **(T-2)**.

3.18.2. Configuration. Airdrop configuration is 10 degrees flap setting and 140 KIAS minimum. (Airspeed may be higher as briefed by flight lead.) **(T-2)**.

3.19. Formation Restrictions:

3.19.1. Takeoff, Approach, and Landing:

3.19.1.1. Visual formation departures are not authorized when IMC will be encountered. **(T-2)**. If IMC is expected, fly separate departures (a separation of 1 minute or as determined locally) and re-join above IMC. **(T-2)**.

3.19.1.2. IMC formation instrument approaches are not authorized. **(T-2)**.

3.19.1.3. Drag approaches are authorized to expedite formation recoveries, but they must comply with the separation criteria. **(T-2)**.

3.19.2. Maneuvering:

3.19.2.1. Formation is prohibited in IMC. **(T-2)**. Formations on an IFR clearance will maintain clear of clouds. **(T-2)**. Formations under a VFR clearance will maintain VFR cloud clearances in accordance with AFI 11-202V3.

3.19.2.2. The maximum number of aircraft in a formation is two. **(T-2)**.

3.19.2.3. The maximum airspeed for the formation to include number two is 250 KIAS below 10,000 feet mean sea level (MSL). **(T-2)**. **Exception:** Military Training Routes (MTR).

3.19.2.4. The minimum altitude for formation position changes is 1,000 feet AGL. **(T-2)**.

3.20. Simulated Air Refueling (AR). Aircrew will utilize the checklist procedures outlined in **Attachment 6** in addition to the following:

3.20.1. Turbulence Restriction. Do not fly precontact or contact positions in actual moderate or severe turbulence. **(T-2)**.

3.20.2. Separation. Receiver aircraft will maintain 1,000 feet below air refueling base altitude until visual contact is established with the tanker. **(T-2)**.

3.20.3. Weather. Visibility of 1 mile and clear of clouds. **(T-2)**.

3.20.4. Altitude Restriction. Do not conduct simulated AR above FL 310. **(T-2)**.

3.21. Advisory Calls: In addition to the items below, see TO 1-1T-1A, AFMAN 11-202V3 and applicable supplements for additional information and requirements.

3.21.1. Pilot Monitoring (PM) Mandatory Calls. The PM will make the following calls:

3.21.1.1. Nonprecision Approaches:

3.21.1.1.1. "One hundred feet above" MDA (published or CSO, as applicable). **(T-2)**.

3.21.1.1.2. "Minimums" at MDA (published or CSO, as applicable). **(T-2)**.

3.21.1.1.3. "Runway in sight." Call when the runway environment is and will remain in sight. **(T-2)**. Avoid making the call too soon when obstructions to vision, such as fog, haze, low clouds, etc., are present.

3.21.1.1.4. "Go around." Call at the Missed Approach Point (MAP) if the runway environment is not in sight. **(T-2)**.

3.21.1.2. Precision Approaches:

3.21.1.2.1. "One hundred feet above" decision height (DH)/DA (published or CSO, as applicable). **(T-2)**.

3.21.1.2.2. "Continue." Call at DH/DA if the runway environment is in sight but the runway red termination bars or the red side row bars are not visible or identifiable. **(T-2).** When using the "continue" call at DH/DA, the "land" or "go around" calls described below may be delayed until 100 feet AGL above THRE/TDZE in accordance with AFMAN 11-202V3.

3.21.1.2.3. "Land." Call at DH/DA, if the runway is in sight and the aircraft is in a safe position for a normal landing. **(T-2)**. In order to call "land" at 100 feet, the red termination bars or the red side row bars must be visible and identifiable. **(T-2)**.

3.21.1.2.4. "Go around." Call at DH/DA if the runway environment is not in sight or the aircraft is not in a safe position for a normal landing. **(T-2)**.

3.21.1.2.5. When flying an RNAV approach to LNAV/VNAV or LPV (AMP aircraft) minimums, use the precision approach calls. **(T-2)**. For all other GPS approaches use nonprecision calls. **(T-2)**.

3.21.1.3. Climbout:

3.21.1.3.1. Transition altitude. **(T-2)**.

3.21.1.3.2. At 1,000 feet below assigned altitude. **(T-2)**.

3.21.1.4. Descent:

3.21.1.4.1. Transition level. **(T-2)**.

3.21.1.4.2. At 1,000 feet above assigned altitude. **(T-2)**.

3.21.1.4.3. At 1,000 feet above initial approach fix altitude or holding altitude. **(T-2)**.

3.21.1.4.4. At 100 feet above procedure turn altitude, final approach fix altitude, and any step down altitude inside the final approach fix. **(T-2)**.

3.21.1.5. Deviations. The PM will announce all heading deviations, airspeed deviations of 5 knots or more from desired, and altitude deviations of 100 feet or more from desired. **(T-2)**.

3.21.2. Mandatory Calls for Any Crewmember. Any crewmember will announce all heading deviations, an altitude deviation of 200 feet or more, an airspeed deviation of 10 knots or more from desired, any potential terrain or obstruction clearance problems, and any potential airborne hazards (e.g., birds or traffic conflicts). **(T-2)**.

3.22. Simulated Emergencies.

3.22.1. Brief all airborne simulated emergencies prior to execution. **(T-2)**.

3.22.2. Do not practice simulated emergency takeoff, approach, or landing procedures unless an IP has immediate access to aircraft controls and weather is a minimum of 1,500 feet and 3 sm. **(T-2)**.

3.22.3. Compound or multiple simulated emergencies are prohibited. **(T-2)**.

3.22.4. Maintain clear of clouds when conducting simulated emergencies. **(T-2)**.

3.22.5. Do not practice a single-engine go-around after selecting 30 degree flaps. **(T-2)**.

3.22.6. Do not initiate practice simulated engine failure below 500 feet AGL during takeoff or landing. **(T-2)**.

3.22.7. Do not fly VFR single-engine and no-flap patterns from the tactical pattern. **(T-2)**.

3.22.8. Discontinue simulated emergencies if interplane communications cannot be maintained. **(T-2)**.

3.22.9. CSOs may only perform PM duties during simulated emergency procedures. **(T-2)**.

3.23. Non-Towered Airfields: See AFMAN 11-2T-1 Volume 1 for training requirements and AFI 11-202V3 for additional requirements.

3.23.1. Aircrews will refer to Federal Aviation Regulations (FAR) Aeronautical Information Manual (AIM), *Traffic Advisory Practices at Airports Without Operating Control Towers*, for more information and restrictions regarding non-towered airfield operations. **(T-2)**.

3.23.2. OG/CC will approve use of and ensure a Letter of Agreement (LOA) is in place to meet AFMAN 11-202V3 requirements (Crash Fire Rescue, parking fees, servicing, etc). **(T-2)**.

3.23.3. Instrument approaches may be flown to non-LOA non-towered airfields for the purposes of descending below the weather to cancel IFR and proceed VFR to facilitate entering a military training route. **(T-2)**.

3.23.4. Restrictions:

3.23.4.1. Flown in day only. **(T-2)**.

3.23.4.2. Flown as single ship only. **(T-2)**.

3.23.4.3. o overhead patterns. **(T-2)**.

3.23.4.4. No more than three total aircraft may be in the pattern (military or civilian). **(T-2)**.

3.24. Functional Check Flight (FCF)/Acceptance Check Flight (ACF) Restrictions. See TO 1-1-300, *Maintenance Operational Checks and Check Flights*, TO 1T-1A-6, *Scheduled Inspection and Maintenance Requirements, T-1A Aircraft*, and TO 1T-1A-6CF-1 *Acceptance and Functional Procedures, T-1A*.

3.24.1. Do not conduct FCF/ACFs with other type missions except FCF/ACF certification training. **(T-2)**.

3.24.2. All FCF/ACF requirements will be accomplished by a fully current/qualified FCF pilot or a pilot in training status with an FCF IP on board. **(T-2)**. The pilot in training status may occupy either seat during the FCF. The OG/CC may authorize experienced T-1 qualified, but not FCF-certified pilots to be the additional pilot during an FCF mission. **Exception**: Pilots designated as Initial Cadre in accordance with AFI 11-202V2, *Aircrew Standardization and Evaluation Program*, may accomplish FCF/ACFs.

3.24.3. With OG/CC approval, FCFs may recover to home station when originating from AETC auxiliary fields, maintenance depots or from bases within the local flying area. **(T-3)**.

3.24.4. Maneuvers not in accordance with TO 1T-1A-6CF-1, will not be accomplished on FCF/ACF missions unless approved by the MAJCOM and required in order to check specific requirements of the aircraft. **(T-2)**.

3.24.5. Touch-and-go landings are not authorized on an FCF sortie unless required to complete the FCF in accordance with TO 1T-1A-6CF-1. **(T-3)**. **Exception**: ACF flights may complete touch-and-go landings to complete ACF requirements.

3.24.6. Local FCF pilots or crews are authorized to perform required FCF/ACFs on transient AETC aircraft if approved by both operations group commanders. **(T-3)**.

Chapter 4

OPERATING RESTRICTIONS

4.1. Minimum Equipment List (MEL) Guidance:

4.1.1. Missions originating from home station or a maintenance facility will not launch with a known malfunction. **(T-2).** Official aircraft status is determined in accordance with AFI 21-103, *Equipment Inventory, Status and Utilization Reporting*. However, aircraft commanders may utilize the MEL (**Table 4.1.**) to determine the acceptability of an aircraft for a mission without further approval.

4.1.2. It would be impractical to prepare a list that would anticipate all possible combinations of equipment malfunctions and contingent circumstances. The MEL identifies the minimum equipment and systems required to launch the aircraft under normal conditions. The MEL represents MAJCOM restrictions only and does not include all equipment or systems essential to airworthiness, e.g., rudder, elevator, flaps, spoilers, tires, etc. Those equipment or systems essential to airworthiness are grounding items. Additionally, consider equipment and/or systems in **Table 4.1** with no listed exceptions as grounding items.

4.2. Aircraft Commander Responsibilities. The aircraft commander is responsible for exercising the necessary judgment to ensure the aircraft is not accepted or flown with inoperative equipment or systems that may result in an unsafe degradation and/or an undue increase in crew workload. The aircraft commander shall account for the possibility of additional failures during continued operation with inoperative systems or components. **(T-3).** The MEL is not intended for continued operation over an indefinite period with systems and/or subsystems inoperative.

4.2.1. Once airborne, aircraft commanders must weigh all pertinent factors when deciding whether to continue or abort a sortie for an aircraft malfunction. **(T-2)**. Factors include weather conditions at home base and divert base, student's mission requirements, etc. **(T-2)**.

4.2.2. Operations group commanders or higher may waive restrictions listed in the MEL or unlisted items and/or equipment on a flight-by-flight basis as long as there is no compromise of flight safety or Air Force directives. Do not delegate this authority below the deputy group commander. **(T-2)**.

Table 4.1. T-1A Minimum Equipment List.

Item	Equipment/System	Installed	Required (T-2).	Remarks/Limitations/Exceptions
1	Air-conditioning unit/ pressurization system	1	1	
2	Anti-ice system	1	0	Includes wing anti-ice, engine anti-ice, horizontal stab anti-ice, horizontal stab de-ice and ice detector system. Required for flight in IMC above the freezing level or forecast/reported icing conditions.

3	Anti-collision beacon	1	1	
4	Anti-collision strobes	3	3	
5	Antiskid system	1	1	
6	Angle of Attack (AOA) Indexer (glare shield)	1	0	
7	AOA system (not including indexer on glare shield)	1	1	
8	AOA, pitot, and static heat system	1	1	If system operation can be physically verified and the master caution annunciator bulbs are operative, aircrew may continue with inoperative indicator lights on the overhead panel.
9	Automatic direction finder (ADF)	1	0	
10	Autopilot	1	0	Required if the pilot or copilot will exceed 4 hours of total flying time in one duty day. Required for any CSO mission unless left and right seat crew complement consists of two qualified pilots. **Exception:** Two qualified pilots may exceed 4 hours, but will not exceed 6 hours.
11	Autopilot Go-Around Switch	1	0	May be inoperative provided:a) approach minimums do not require its use, and b) alternate procedures are operative to disconnect autopilot and establish initial pitch and wings level attitude.
12	Clock	2	0	One clock minimum required for CSO, low-level, airdrop, or air refueling missions. A personal clock and/or stopwatch may be substituted at the aircraft commander's discretion.
13	Cockpit Sun Visors	2	0	May be inoperative or missing provided there are no visual restrictions to the crew
14	DME	3	3	

15	Electronic flight instrument system	1	1	Includes two display units, four electronic flight displays, two display select panels, and a multifunctional display.
16	Electronic oil dipstick	2	0	If inoperative, check oil manually.
17	Engine fire detection system	2	2	
18	Engine Synchronizer System	1	0	
19	Flight data recorder	1	1	Failure noted with either an "SDRR Fail" or "FDMU Fail" message. Aircrews may take off with "SDRR Mem Full."
20	Flight Management System (FMS)	1	1	
21	GPS	1	0	GPS is required for air refueling, GPS defined MOAs, and any other planned/filed RNAV procedures. Additionally, notify ATC of not being a /G designation.
22	Ground Proximity Warning System (GPWS)	1	1	May be inoperative for day VMC-only mission, unless the mission includes low-level navigation.
23	Intercom system	1	1	
24	Landing lights	2	1	Both lights must be operational for night missions.
25	Navigation lights	7	5	All lights on each wing (2 green and 1 white; or 2 red and 1 white) and tail light must be operational for night flight. One green and one red light may be inoperative for day flight provided at least one green and one red light remain operative. All white lights must be operational. **Note**: All lights will be operational for home station departure.
26	Oxygen system	1	1	Additionally, masks must be operational with a current inspection in all active crew positions for the mission being flown.

27	Radio altimeter	1	0	Required for low-level navigation, night, or IMC pattern operations with ceilings below 1,000 feet.
28	Rudder boost	1	1	
29	Stall warning system	2	2	The stall warning system includes "stick shaker," aural warning, glare shield lights and annunciator lights.
30	TACAN	1	1	Air-to-air functionality must be operable for air refueling/air drop/formation operations.
31	TCAS	1	1	
32	UHF radio	1	1	
33	Very high frequency Omnidirectional Range station (VOR) and ILS	2	2	Not required for day/VMC local sortie.
34	VHF radio	1	1	
35	Weather radar	1	0	Required for flight if convective activity is known or forecast along planned route of flight for estimated time en route (ETE) + 2 hours.
36	Windshield heat	2	0	Required for flight above FL 180, flight in IMC above the freezing level, or forecast/reported icing conditions.
37	Windshield wipers	2	0	Required if precipitation is forecast or reported ±1 hour of estimated time of departure or estimated time of arrival.
38	Wing inspection lights	2	0	Both lights required at night.
39	Yaw damper	1	0	Required for cross-country missions and flight above FL280.

MARK D. KELLY, Lt Gen, USAF
Deputy Chief of Staff, Operations

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

14 CFR 95, *Subpart B, Designated Mountainous Areas*

Advisory Circular 90-100A, *U.S. Terminal and En Route Area Navigation (RNAV) Operations.*

AFPD 11-2, *Aircrew Operations,* 31 January 2019

AFPD 11-4, *Aviation Service,* 12 April 2019

AFI 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure,* 21 September 2018

AFI 11-202V2, *Aircrew Standardization/Evaluation Program,* 6 December 2018

AFMAN 11-202V3, *Flight Operations,* 10 June 2020

AFMAN 11-218, *Aircraft Operations and Movement on the Ground,* 5 April 2019

AFI 11-301V1, *Aircrew Flight Equipment (AFE) Program,* 10 October 2017

AFMAN 11-402, *Aviation and Parachutist Service,* 24 January 2019

AFI 13-204V3_AETCSUP, *Airfield Operations Procedures and Programs,* 30 January 2017

AFI 21-103, *Equipment Inventory, Status and Utilization Reporting,* 30 April 2020

AFI 65-503, *US Air Force Cost and Planning Factors,* 13 July 2018

AETCMAN 11-247, *T-1 Flying Fundamentals*, 17 September 2019

AFI 11-401_AETC SUP, *Aviation Management,* 29 February 2016

AFMAN 11-2T-1V1, *T-1A Aircrew Training, 24 July 2020*

AFI 33-360, *Publications and Forms Management,* 1 December 2015

AFI 33-322, *Records Management and Information Governance Program,* 23 March 2020

DoDI 5400.11, *DoD Privacy and Civil Liberties Programs,* 29 January 2019

FAA Advisory Circular 90-107, *Guidance for Localizer Performance with Vertical Guidance and Localizer Performance without Vertical Guidance Approach Operations in the U.S. National Airspace System,* 11 February 2011

Federal Aviation Regulations (FAR) Aeronautical Information Manual (AIM), *Traffic advisory Practices at Airports without Operating Control Towers.*

JP 3-17, *Air Mobility Operations,* 5 February 2019

TO 1-1-300, *Acceptance/Functional Check Flights and Maintenance Operational Checks*, 14 November 2007

TO 1T-1A-1, *Flight Manual – T-1A Series Aircraft,* 31 January 2017

TO 1T-1(T)A-1 (CSO Mod), *Flight Manual – USAF T-1A Supplemental Flight Manual, USAF Series T-1A Aircraft*, 31 January 2017

TO 1T-1A-1-1, *Flight Manual – Appendix I, Performance Data T-1A,* 30 June 2013

TO 1T-1A-1CL-1, *Checklist – Flight Crew, T-1A Aircraft,* 30 June 2013

TO 1T-1A-1CL-2, *Checklist – Flight Crew, Multifunction Display Disk T-1A,* 31 August 2010

TO 1T-1A-1-2CL-1, T-1A, *CSO Conversion Aircraft,* 31 August 2010

TO 1T-1A-6CF-1, *Acceptance and Functional Procedures, T-1A,* 1 April 1997, Change 3, 31 January 2017

TO 42C-1-2, *Anti-Icing, De-Icing and Defrosting of Parked Aircraft,* 19 May 2014

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

DD Form 365-4, *Weight and Balance Clearance Form F -Transport*

Abbreviations and Acronyms

A/A—air-to-air

AETC—Air Education and Training Command

ACF—acceptance check flight

ADF—automatic direction finding

ADS-B—automatic dependent surveillance-broadcast

AF/A3T—- Deputy Chief of Staff, Operations, Director of Training and Readiness

AFI—Air Force instruction

AFMAN—Air Force Manual

AFPD—Air Force policy directive

AIM—aviaiton information manual

AGL—above ground level

AHAS—Avian Hazard Advisory System

AMP—Aircraft Modernization Program

AOA—angle of attack

AP—-autopilot

AR—air refueling

ARCP—air refueling control point

ARCT—air refueling control time

ARIP—air refueling initial point

ARMS—aviation resource management system

ASDA—accelerate stop distance available

ASRR—Airfield Suitability and Restrictions Report

ATC—air traffic control

BAM—bird avoidance model

BIT—break-in-training

CDI—course deviation indicator

CDU—control display unit

CFL—critical field length

CRM—cockpit/crew resource management

CSO—combat systems officer

DA—decision altitude

DH—decision height

DME—distance measuring equipment

DNIF—duties not involving flying

EADI—electronic attitude direction indicator

EFB—electronic flight bag

EHSI—electronic horizontal situation indicator

ERAA—emergency route abort altitude

ETA—estimated time of arrival

ETE—estimated time en-route

FAA—Federal Aviation Administration

FAF—final approach fix

FAR—Federal Aviation Regulations

FCF—functional check flight

FCIF—flight crew information file

FIH—flight information handbook

FDMU—flight data memory unit

FLIP—flight information publication

FMS—flight management system

GLS—global navigation satellite system landing system

GNSS—global navigation satellite system

GPS—global positioning system

GPWS—ground proximity warning system

IAP—instrument approach procedure

ICSO—instructor combat systems officer

IFF—identification, friend or foe

IFG—in-flight guide

IFR—instrument flight rules

ILS—instrument landing system

IMC—instrument meteorological conditions

IP—instructor pilot

JMPS—Joint Mission Planning System

JOG—Joint Operations Graphics

KIAS—knots indicated air speed

KIO—knock-it-off

LDA—landing distance available

LNAV—lateral navigation

LOA—letter of agreement

MAJCOM—major command

MARSA—military assumes responsibility for the separation of aircraft

MCT—maximum continuous thrust

MDA—minimum descent altitude

MTR—military training route

MEL—minimum equipment list

MFD—multi-function display

MIF—maneuver item file

MOA—military operating area

NAS—National Airspace System

NM—nautical mile

NOTAM—notice to airmen

OG—operations group

ONC—Operational Navigation Chart

OPR—office of primary responsibility

ORM—operational risk management

PBN—performance based navigation

PF—pilot flying

PIC—pilot in command

PIT—pilot instructor training

PM—pilot monitoring

RAIM—receiver autonomous integrity monitoring

RCAM—runway condition assessment matrix

RCR—runway condition reading

RNAV—area navigation

RNP—required navigation performance

SDRR—signal data recorder reproducer

SM—statute mile

SOF—supervisor of flying

SR—slow route

STAR—standard terminal arrival

SUPT—specialized undergraduate pilot training

TACAN—tactical air navigation

TCAS—Traffic Alert and Collision Avoidance System

TCTO—Time Compliance Technical Order

TDZE—touchdown zone elevation

THRE—runway threshold elevation

TO—technical order

TOLD—takeoff and landing data

TORA—takeoff runway available

TPC—Tactical Pilotage Chart

TSE—total system error

UCT—undergraduate combat systems officer training

UHF—ultra high frequency

VCOA—visual climb over airport

VFR—visual flight rules

VHF—very high frequency

VMC—visual meteorological conditions

VNAV—vertical navigation

VR—visual route

WAAS—wide area augmentation system

Terms

Aircrew Member—An individual, designated on the Flight Authorization who is an aircrew member as explained in AFPD 11-4, *Aviation Service,* AFMAN 11-402, *Aviation and Parachutist Service,* is assigned to a position listed in AFI 65-503, *US Air Force Cost and Planning Factors,* and is designated on orders to fulfill specific aeronautical tasks.

Airfield—An area on land or water that is used or intended to be used for the landing and takeoff of aircraft; includes its buildings and facilities, if any. The FAA term "airport" and the ICAO term "aerodrome" may be used interchangeably with airfield for the purposes of this manual. An area prepared for the accommodation (including any buildings, installations, and equipment), landing, and takeoff of aircraft [JP3-17].

Alternate Airfield—An airfield at which an aircraft may land if a landing at the intended airfield becomes inadvisable [*AIM Pilot/Controller Glossary*].

Alternate Means of Navigation—The use of a suitable RNAV system in lieu of operational conventional NAVAIDS without monitoring those NAVAIDs.

Altimeter Setting—The barometric pressure reading used to adjust a pressure altimeter for variations in existing atmospheric pressure or to the standard altimeter setting (29.92 inches Hg) [*AIM Pilot/Controller Glossary*].

Area Navigation (RNAV)—A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground-based or space-based NAVAIDs or within the limits of the capability of self-contained aids, or a combination of these.

Avionics Modernization Program (AMP)—any aircraft modified by Time Compliance Technical Order (TCTO) 737. These aircraft have upgraded avionic systems and capabilities.

Combat Systems Officer(CSO)—"CSO" refers to students enrolled in UCT and instructor combat systems officer (ICSO) upgrade training; and qualified CSO and ICSO.

Electronic Flight Bag (EFB)—An electronic display system intended primarily for flight deck use that includes the hardware and software necessary to support an intended function. EFB devices can display a variety of aviation data or perform basic calculations (e.g., performance data, fuel calculations). In the past, some of these functions were traditionally accomplished using paper references, or were based on data provided to the flight-crew by a flight dispatch function. The scope of the EFB functionality may include various other hosted databases and applications. Physical EFB displays may use various technologies, formats, and forms of communication.

Emergency Fuel—The point at which it is necessary to proceed directly to the airport of intended landing due to low fuel. Declaration of "emergency fuel" is an explicit statement that priority handling by ATC is both required and expected.

Global Navigation Satellite System (GNSS)—GNSS refers collectively to the worldwide positioning, navigation, and timing determination capability available from one or more satellite constellations in conjunction with a network of ground stations [*AIM Pilot/Controller Glossary*].

Instrument Approach—A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing or to a point from which a landing may be made visually [*AIM Pilot/Controller Glossary*].

Instrument Flight Rules (IFR)—Rules governing the procedures for conducting instrument flight. Also a term used by pilots and controllers to indicate type of flight plan [*AIM Pilot/Controller Glossary*].

Instrument Meteorological Conditions (IMC)—Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling less than the minima specified for visual meteorological conditions [*AIM Pilot/Controller Glossary*].

Navigation Aid (NAVAID)—Any visual or electronic device airborne or on the surface which provides point-to-point guidance information or position data to aircraft in flight [*AIM Pilot/Controller Glossary*].

Receiver Autonomous Integrity Monitoring (RAIM)—A technique whereby a civil GNSS receiver determines the integrity of the GNSS navigation signals without reference to sensors or non-DoD integrity systems other than the receiver itself. This determination is achieved by a consistency check among redundant pseudorange measurements [*AIM Pilot/Controller Glossary*].

Student—refers to any crewmember enrolled in specialized undergraduate pilot training (SUPT), undergraduate combat systems officer training (UCT), pilot instructor training (PIT), fixed-wing qualification training and combat systems officer (CSO) instructor training.

Attachment 2

SINGLE-SHIP BRIEFING GUIDE

A2.1. Pre-mission:

A2.1.1. Review grade book, syllabus, maneuver item file (MIF), and Commander Awareness Program.

A2.1.2. Prerequisites met or opted.

A2.1.3. Grounded (duties not involving flying [DNIF], Unsat).

A2.1.4. Crew duty day, crew rest, and nutrition.

A2.1.5. Mission planning checklist.

A2.1.6. Night procedures guide.

A2.1.7. Orientation and passenger briefing guide.

A2.1.8. Flyover and static guide.

A2.1.9. Cockpit/crew resource management (CRM) guide:

A2.1.9.1. In-flight checks and discipline.

A2.1.9.2. Clearing (high threat areas and collision avoidance) (visually, radios, Traffic Alert and Collision Avoidance System [TCAS]).

A2.1.9.3. Radio procedures and discipline.

A2.1.9.4. Transfer of aircraft control (with or without intercom).

A2.1.9.5. Low weather (below 500-foot ceiling or 1.5 SM visibility) takeoff and landing considerations.

A2.1.9.6. Seat exchange procedures.

A2.1.9.7. Simulated emergency procedures.

A2.1.9.8. Jump seat duties.

A2.1.9.9. T-1A training rules: time-out.

A2.1.10. ORM guide.

A2.1.11. Verify EFB updated and battery status.

A2.2. Overview:

A2.2.1. Call sign.

A2.2.2. Aircraft commander.

A2.2.3. Mission profile and requirements.

A2.2.4. Mission objectives.

A2.2.5. Communication guide reviewed.

A2.2.6. Time hack, step time, start time, takeoff time, and chock time.

A2.2.7. Review timeline, joker time and/or fuel, bingo fuel and/or time.

A2.2.8. Weather, flight plan, airfield suitability and restrictions report (ASRR), notice to airmen (NOTAM), and takeoff and landing data (TOLD).

A2.2.9. Alternate mission and profile.

A2.2.10. Flight crew information file (FCIF), ops notes, read file, bold face, and ops limits.

A2.2.11. Current special interest items (SII).

A2.3. Ground Operations:

A2.3.1. Crew duties (left and right seat).

A2.3.2. Start, taxi, and taxi-back procedures.

A2.3.3. Delays and spares.

A2.3.4. Ground abort.

A2.4. Takeoff and Departure:

A2.4.1. Active runway, airfield restrictions, cables, barriers, declared distance, and trouble T.

A2.4.2. Type takeoff and departure.

A2.4.3. Avionics setup (pilot flying [PF] and pilot monitoring [PM]).

A2.5. In-flight:

A2.5.1. Route of flight.

A2.5.2. Specific area work and parameters.

A2.5.3. Transition base:

A2.5.3.1. Approach review.

A2.5.3.2. Patterns and landings.

A2.5.3.3. Active runway, airfield restrictions, cables, barriers, declared distance, and trouble T.

A2.5.4. Touch-and-go procedures.

A2.5.5. Wake turbulence.

A2.5.6. Recovery: Return routing and approach review.

A2.5.7. VFR leg procedures:

A2.5.7.1. Turn points and route of flight.

A2.5.7.2. Headings, altitudes, and times.

A2.5.7.3. Flight following.

A2.5.7.4. VFR arrival.

A2.5.8. Instrument meteorological conditions (IMC) procedures:

A2.5.8.1. Anti-ice usage.

A2.5.8.2. Unusual attitudes.

A2.5.8.3. Spatial disorientation.

A2.6. Emergencies:

A2.6.1. Emergency ground egress.

A2.6.2. Abort procedures.

A2.6.3. Takeoff emergencies and emergency return.

A2.6.4. General aircraft malfunctions.

A2.6.5. Physiological and rapid decompression.

A2.6.6. Bird strike.

A2.6.7. Intercom and radio failure.

A2.6.8. Emergency and alternate airfields.

A2.7. Low-level:

A2.7.1. Coordination:

A2.7.1.1. Route scheduled (entry window).

A2.7.1.2. Aircrew Planning (AP)/1B restrictions, Avian Hazard Advisory System (AHAS) and Bird Avoidance Model (BAM).

A2.7.1.3. Chart and vertical obstruction currency.

A2.7.1.4. Entry (point and time).

A2.7.1.5. Exit (point and time).

A2.7.2. Route entry:

A2.7.2.1. Prominent features.

A2.7.2.2. Radial and distance measuring equipment (DME).

A2.7.2.3. Maneuvering to enter.

A2.7.2.4. Communications; identification, friend or foe (IFF); and ground proximity warning system (GPWS).

A2.7.3. Route study:

A2.7.3.1. Corridor width, block altitudes, ground track, and turn points.

A2.7.3.2. Planned groundspeed and altitudes.

A2.7.3.3. Mandatory reporting points and frequencies.

A2.7.3.4. Continuation and bingo fuels.

A2.7.3.5. Route conflicts:

A2.7.3.5.1. Parallel and crossing routes.

A2.7.3.5.2. Airfields, airspace, obstructions, and terrain.

A2.7.3.5.3. Populated areas.

A2.7.3.5.4. Noise-sensitive areas.

A2.7.3.5.5. Restricted areas.

A2.7.4. Recovery: Altitude, heading, fix, frequency, and IFF.

A2.7.5. Low-level emergencies:

A2.7.5.1. Emergency route abort altitude (ERAA) and lost procedures.

A2.7.5.2. IMC and visual meteorological conditions (VMC) abort procedures and divert.

A2.7.5.3. Bird avoidance and bird strike.

A2.7.5.4. Engine failure.

A2.7.5.5. Aircraft malfunctions.

A2.8. Additional Items:

A2.8.1. Publications, equipment, and special clothing requirements.

A2.8.2. Weight and balance.

A2.8.3. Food and water.

A2.8.4. Jewelry and scarves removed.

A2.8.5. Mobile phones off.

A2.9. Questions.

Attachment 3

MISSION/FORMATION BRIEFING GUIDE

A3.1. Pre-mission:

A3.1.1. Review grade book, syllabus, MIF, and Commander Awareness Program.

A3.1.2. Prerequisites met and opted.

A3.1.3. Grounded (DNIF, Unsat).

A3.1.4. Crew duty day, crew rest, and nutrition.

A3.1.5. Mission planning checklist.

A3.1.6. Night procedures guide.

A3.1.7. Orientation and passenger briefing guide.

A3.1.8. Flyover and static guide.

A3.1.9. CRM guide:

A3.1.9.1. In-flight checks and discipline.

A3.1.9.2. Clearing (high threat areas and collision avoidance) (visually, radios, and TCAS).

A3.1.9.3. Radio procedures and discipline.

A3.1.9.4. Transfer of aircraft control (with or without intercom).

A3.1.9.5. Low weather (below 500-foot ceiling or 1.5 SM visibility) takeoff and landing considerations.

A3.1.9.6. Seat exchange procedures.

A3.1.9.7. Simulated emergency procedures.

A3.1.9.8. Jump seat duties.

A3.1.9.9. T-1A training rules: knock-it-off, terminate.

A3.1.10. ORM guide.

A3.2. Overview:

A3.2.1. Call signs.

A3.2.2. Mission/formation commander and aircraft commanders.

A3.2.3. Mission profile and requirements.

A3.2.4. Mission objectives.

A3.2.5. Communication guide reviewed.

A3.2.6. Time hack, step time, check-in, engine start, taxi time, takeoff times, and chock time.

A3.2.7. Review timeline, joker time/fuel, bingo fuel/time.

A3.2.8. Weather, flight plan, ASRR, NOTAMs, and TOLD.

A3.2.9. Alternate missions and profile.

A3.2.10. FCIF, ops notes, read file, bold face, and ops limits.

A3.2.11. Current SIIs.

A3.3. Ground Operations:

A3.3.1. Crew duties (left and right seat).

A3.3.2. Radio procedures and interplane.

A3.3.3. Air-to-air (A/A) TACAN/ automatic dependent surveillance broadcast (ADS-B).

A3.3.4. Start, taxi, and taxi back procedures.

A3.3.5. Delays and spares.

A3.3.6. Ground abort.

A3.4. Takeoff and Departure:

A3.4.1. Active runway, airfield restrictions, cables, barriers, declared distance, and trouble T.

A3.4.2. Runway lineup and winds.

A3.4.3. Type takeoff and departure (15 second, 1 minute, cell, single-ship).

A3.4.4. Join-up (altitude and location).

A3.4.5. Takeoff no later than time.

A3.4.6. Avionics setup (PF and PM).

A3.4.7. Cell formation departure (climb airspeed, VSI, and altitude reporting procedures).

A3.5. In-flight:

A3.5.1. Route of flight.

A3.5.2. Breakouts.

A3.5.3. Lost sight and rendezvous.

A3.5.4. Lost wingman.

A3.5.5. Wake turbulence.

A3.5.6. Maneuver procedures and parameters:

A3.5.6.1. Rejoins (type and airspeed).

A3.5.6.2. En route airspeed.

A3.5.6.3. MOA profile:

A3.5.6.3.1. Rejoins.

A3.5.6.3.2. Practice lost wingman.

A3.5.6.3.3. Cell.

A3.5.6.3.4. Precontact and contact.

A3.5.6.3.5. Simulated airdrop.

A3.5.7. Position change (fuel, time, and IFF).

A3.6. Air Refueling:

A3.6.1. Radio procedures and A/A TACAN.

A3.6.2. Military assumes responsibility for separation of aircraft (MARSA).

A3.6.3. Scheduled aerial refueling (AR) track, time, block altitudes, and controlling agency.

A3.6.4. Air refueling initiation point (ARIP), air refueling control point (ARCP), and air refueling control time (ARCT).

A3.6.5. AR rendezvous procedures:

A3.6.5.1. AR altitude.

A3.6.5.2. Overrun.

A3.6.5.3. IFF procedures.

A3.6.5.4. Practice emergency separation and breakaway.

A3.6.5.5. Breakup and recovery.

A3.7. Airdrop and Low-level:

A3.7.1. Coordination:

A3.7.1.1. Route scheduled (entry window).

A3.7.1.2. Aircrew Planning (AP)/1B restrictions, AHAS, and BAM.

A3.7.1.3. Chart and vertical obstruction currency.

A3.7.1.4. Compare low-level charts.

A3.7.1.5. Entry (point and time).

A3.7.1.6. Exit (point and time).

A3.7.2. Route entry:

A3.7.2.1. Prominent features.

A3.7.2.2. Radial and DME.

A3.7.2.3. Maneuvering to enter.

A3.7.2.4. Orbit procedures.

A3.7.2.5. Communications, IFF, and GPWS.

A3.7.3. Route study:

A3.7.3.1. Corridor width, block altitudes, ground track, and turn points.

A3.7.3.2. Planned groundspeed and altitudes.

A3.7.3.3. Mandatory reporting points and frequencies.

A3.7.3.4. Continuation and bingo fuels.

A3.7.3.5. Route conflicts:

A3.7.3.5.1. Parallel and crossing routes.

A3.7.3.5.2. Airfields, airspace, obstructions, and terrain.

A3.7.3.5.3. Populated areas.

A3.7.3.5.4. Noise-sensitive areas.

A3.7.3.5.5. Restricted areas.

A3.7.4. Low-level emergencies:

A3.7.4.1. ERAA and lost procedures.

A3.7.4.2. IMC and VMC abort procedures and divert.

A3.7.4.3. Bird avoidance and bird strike.

A3.7.4.4. Engine failure.

A3.7.4.5. Aircraft malfunctions.

A3.7.5. IP, slowdown, and timing.

A3.7.6. Airspeed, formation position, drop altitudes, and configuration.

A3.7.7. Time over target.

A3.7.8. Drop zone features and run-in heading.

A3.7.9. Acceleration and escape.

A3.7.10. Position change.

A3.7.11. Exit procedures:

A3.7.11.1. Altitude and routing.

A3.7.11.2. Heading.

A3.7.11.3. Fix.

A3.7.11.4. Frequency.

A3.7.11.5. IFF.

A3.8. Recovery:

A3.8.1. Flight breakup.

A3.8.2. Type recovery (downwind, drag, and overhead).

A3.8.3. Landing (low approach, touch and go, and full stop).

A3.8.4. Traffic pattern rejoin (airspeed and position).

A3.8.5. After landing checks and taxi back.

A3.9. Emergencies:

A3.9.1. Abort procedures.

A3.9.2. Takeoff emergencies.

A3.9.3. General aircraft malfunctions.

A3.9.4. Physiological and rapid decompression.

A3.9.5. Bird strike.

A3.9.6. IMC procedures.

A3.9.7. Intercom, radio failure, and electrical failure:

A3.9.7.1. VMC location—NOTAMs and weather.

A3.9.7.2. IMC location—NOTAMs and weather.

A3.9.8. Emergency and alternate airfields.

A3.10. Questions.

A3.11. Individual Crew Briefs:

A3.11.1. Emergency ground egress.

A3.11.2. Abort.

A3.11.3. Takeoff emergencies and emergency return.

A3.11.4. T-1A training rules: time-out.

A3.11.5. Back-half profile:

A3.11.5.1. Route of flight.

A3.11.5.2. Specific area work and parameters.

A3.11.5.3. Transition base:

A3.11.5.3.1. Approach review.

A3.11.5.3.2. Patterns and landings.

A3.11.5.3.3. Active runway, airfield restrictions, cables, barriers, declared distance, and trouble-T.

A3.11.5.4. Touch-and-go procedures.

A3.11.5.5. Wake turbulence.

A3.11.5.6. Recovery: Return routing and approach review.

A3.11.5.7. VFR leg procedures:

A3.11.5.7.1. Turn points and route of flight.

A3.11.5.7.2. Headings, altitudes, and times.

A3.11.5.7.3. Flight following.

A3.11.5.7.4. VFR arrival.

A3.11.5.8. IMC procedures:

A3.11.5.8.1. Anti-ice usage.

A3.11.5.8.2. Unusual attitudes.

A3.11.5.8.3. Spatial disorientation.

A3.11.6. Alternate single-ship profile.

A3.11.7. Additional items:

A3.11.7.1. Publications, equipment, and special clothing requirements.

A3.11.7.2. Weight and balance.

A3.11.7.3. Food and water.

A3.11.7.4. Jewelry and scarves removed.

A3.11.7.5. Mobile phones off.

A3.12. Questions.

Attachment 4

ORIENTATION/PASSENGER BRIEFING GUIDE

A4.1. Mission Objectives: Desired learning objectives.

A4.2. Ground Operations:

A4.2.1. Call sign and time hack.

A4.2.2. Takeoff time.

A4.2.3. Ramp safety—avoid intake and exhaust of engines.

A4.2.4. Foreign object damage (FOD) considerations.

A4.2.5. Switches and levers—**DO NOT TOUCH.**

A4.2.6. Seating.

A4.2.7. Headset, Y-cord, earplugs, and motion sickness bags.

A4.2.8. Strap-in, oxygen, and communications hookup.

A4.3. Flight Overview:

A4.3.1. Takeoff and departure procedures.

A4.3.2. Air work.

A4.4. Emergency Procedures:

A4.4.1. Ground:

A4.4.1.1. Emergency ground egress.

A4.4.1.2. Engine fire.

A4.4.1.3. Get away from aircraft—rendezvous for accountability.

A4.4.2. Takeoff:

A4.4.2.1. Abort—conditions.

A4.4.2.2. Continue—conditions.

A4.4.3. In-flight:

A4.4.3.1. Bird strike.

A4.4.3.2. Physiological:

A4.4.3.2.1. Ear and sinus block.

A4.4.3.2.2. Hypoxia.

A4.4.3.2.3. Airsickness.

A4.4.3.3. Intercom and radio failure.

A4.5. Prohibitions:

A4.5.1. Flame-producing devices fueled with propane, such as methyl alcohol butane lighters with see-through reservoirs.

A4.5.2. Explosives and flammable corrosive materials with toxic or irritating fumes.

A4.5.3. Narcotics, marijuana, alcohol, or any other dangerous drug.

A4.5.4. Use of any tobacco product on the aircraft.

A4.5.5. Mobile phones must be turned off and stowed from initial taxi until clear of runway after landing.

A4.5.6. Use of outlet/Ethernet ports (CSO-modified).

A4.6. Notes:

A4.6.1. Local orientation flight checklist complete (as applicable).

A4.6.2. TO 1T-1A-1CL/2CL-1 passenger briefing checklist complete.

A4.6.3. If the IP is not confident the individual fully understands emergency procedures, **DO NOT** fly the mission.

A4.6.4. Review current MAJCOM and local restrictions before flight.

Attachment 5

SORTIE DEBRIEFING GUIDE

A5.1. Mission Planning:

A5.1.1. Complete/accurate.

A5.1.2. Mission data cards.

A5.2. Sortie:

A5.2.1. Mission and training objectives met.

A5.2.2. Communications.

A5.2.3. Ground operations review.

A5.2.4. In-flight operations review.

A5.3. Miscellaneous:

A5.3.1. CRM.

A5.3.2. General knowledge/emergency procedures.

Attachment 6

PIT/UPT CHECKLIST PROCEDURES

A6.1. TANKER AIR REFUELING CHECKLISTS * Not required for subsequent rendezvous.

Table A6.1. Rendezvous Checklist: (initiate prior to 15-minute call)

Rendezvous Checklist: (initiate prior to 15-minute call)
1. Altimeters – SET (PF, PM)*
2. Radios – SET (PM)*
3. A/A TACAN – SET (PM)*
4. MCT – COMPUTED AND POSTED (PM)*
5. Turn Range/Offset – COMPUTED (PM)
6. Back-up Timing – COMPUTED (PM)
7. Radio Contact – ESTABLISHED (PF)
8. Rendezvous Checklist – COMPLETED (PM)

Table A6.2. Preparation for contact checklist:

Preparation for contact checklist:
(Receiver between 1NM and precontact)
1. Autopilot Nav Mode – DESELECTED (PF,PM)
2. TCAS – TA ONLY (PM)
3. Preparation for Contact Checklist – COMPLETED (PM)

Table A6.3. Post Air Refueling Checklist:

Post Air Refueling Checklist:
1. Post Air Refueling Report – AS REQUIRED (PF)
2. TCAS – TA/RA (PM)
3. A/A TACAN – AS REQUIRED (PM)*
4. Radios – AS REQUIRED (PM)*
5. Altimeters – SET (PF, PM)*
6. Post Air Refueling Checklist – COMPLETED (PM)

A6.2. RECEIVER AIR REFUELING CHECKLISTS.

Table A6.4. Rendezvous Checklist (complete NLT 15 min prior to the ARCT).

Rendezvous Checklist: (complete NLT 15 min prior to the ARCT)
1. Altimeters - SET (PF, PM)*
2. Radios - SET (PM)*
3. A/A TACAN - SET (PM)*
4. MCT - COMPUTED AND POSTED (PM)*
5. Radio Contact - ESTABLISHED (PF)
6. Rendezvous Checklist - COMPLETED (PM)

Table A6.5. Preparation for Contact Checklist (Receiver between 3 and 1NM).

Preparation for Contact Checklist: (Receiver between 3 and 1NM)
1. Ignition Switches - ON (PM)
2. Transponder - STBY (PM)
3. Weather Radar - STBY (PM)
4. Preparation for Contact Checklist - COMPLETED (PM)

Table A6.6. Post Air Refueling Checklist:

Post Air Refueling Checklist:
1. Ignition Switches - AS REQUIRED (PM)
2. Transponder - SET (PM)
3. Weather Radar - AS REQUIRED (PM)
4. Altimeters - AS REQUIRED (PF, PM)*
5. Radios - AS REQUIRED (PM)*
6. A/A TACAN - SET (PM)*
7. Post Air Refueling Checklist - COMPLETED (PM)

A6.3. LOW LEVEL CHECKLISTS.

Table A6.7. Low Level Entry Checklist:

Low Level Entry Checklist
***Note**: Accomplish in lieu of the descent checklist for low level operations.*
1. Crew Briefing COMPLETED (PM)
2. Altimeters SET (PF, PM)
3. Radio Altimeter/DH SET (PF, PM)
4. Windshield Heat AS REQUIRED (PM)
5. Heading and Attitude Systems CHECKED (PF, PM)
6. MCT COMPUTED AND POSTED (PM)
7. Belts and Harnesses ADJUSTED AND FASTENED (PF, J, PM)
8. Loose Items SECURED (PF, J, PM)
9. Exterior Lights ON (PM)
10. Ignition Switches ON (PM)
11. GPWS SET (PM)
12. Altimeter Altitude Preselect ERAA SET (PM)
13. Transponder SET (PM)
14. Radios SET (PM)
15. Radio/Baro Altimeter Crosscheck (1000 2000 AGL) COMPLETED (PF, PM)
16. Low Level Entry Checklist COMPLETED (PM)

Table A6.8. Low Level Exit Checklist:

Low-Level Exit Checklist
1. Navaids - SET (PF, PM)
2. Altimeters - SET (PF, PM)
3. Transponder - SET (PM)

4. Ignition Switches - As Required (PF, PM)
5. Low-Level Exit Checklist - COMPLETED (PM)
***Note**: Accomplish the Descent Procedures Checklist after the low-level and prior to approach/pattern operations.*

A6.4. UCT CHECKLIST PROCEDURES.

Table A6.9. LOW LEVEL ENTRY CHECKLIST.

LOW LEVEL ENTRY CHECKLIST
NOTE: ACCOMPLISH IN LIEU OF THE DESCENT CHECKLIST FOR LOW LEVEL OPERATIONS.
1. Crew Briefing Completed (CP)
2. Radio Altimeter/DH Set (P, CP)
3. Heading and Attitude Systems Checked (P, CP)
4. MCT Computed and posted (CP)
5. Belts and Harnesses Adjusted and fastened (P, J, CSO, IN, O, CP)
6. Loose Items Secured (P, J, CSO, IN, O, CP)
7. Exterior Lights On (CP)
8. Ignition Switches On (CP)
9. Altimeters Set (P, CP)
10. Windshield Heat As required (CP)
11. Radios Set (P, CP)
12. Radio/Baro Altimeter Crosscheck (1000 2000 AGL) Completed (P, CP)
13. Altimeter Altitude Preselect ERAA Set (P, CP)
14. GPWS Set (CP)
15. Transponder Set (CP)
16. Low Level Entry Checklist Completed (CP)

Table A6.10. LOW LEVEL EXIT CHECKLIST.

LOW-LEVEL EXIT CHECKLIST
1. Navaids - Set (P, CP)
2. Altimeters - Set (P, CP)
3. Transponder - Set (CP)
4. Ignition Switches - As Required (CP)
5. Low-Level Exit Checklist - Completed (CP)

Attachment 7

T-1A TRAINING RULES

A7.1. Note: Brief items applicable to the mission in sufficient detail to prevent any misunderstanding between crewmembers. "Knock-It-Off" (KIO) and "Terminate" are terms used between aircraft during formation, airdrop and air refueling. "Time-Out" is used by any crewmember within individual aircraft.

A7.2. Knock-It-Off (KIO) Situations. KIO will be called when safety of flight is a factor. Situations requiring a KIO include, but are not limited to:

A7.2.1. A dangerous situation is developing.

A7.2.2. An unbriefed or unscheduled flight enters the working area and is detrimental to the safe conduct of the mission.

A7.2.3. Weather is below minimums for the area or route.

A7.2.4. Any aircraft exceeds maneuvering limits such that safety of flight is compromised (for example, over G, min airspeed, etc.).

A7.2.5. Loss of Situational Awareness (SA).

A7.3. Knock-It-Off Actions:

A7.3.1. Acknowledge with call sign.

A7.3.2. Clear flight path.

A7.3.3. Cease maneuvering and climb and/or descend to a safe altitude.

A7.3.4. Maintain visual.

A7.4. Terminate Situations. Terminate will be used to discontinue maneuvering when safety of flight is not a factor. Situations requiring a Terminate include, but not limited to:

A7.4.1. BINGO/JOKER fuel is reached.

A7.4.2. When desired learning objectives are met or are unattainable.

A7.4.3. Exceeding area boundaries.

A7.4.4. Below minimum altitude or within minimum range which does not compromise safety.

A7.4.5. Out of position (not in visual position, cell position, etc.) with no expectation of expeditious return to position.

A7.5. Terminate Actions:

A7.5.1. Acknowledge with call sign.

A7.5.2. Clear flight path.

A7.5.3. Cease maneuvering and climb and/or descend to a safe altitude.

A7.5.4. Maintain visual.

A7.6. Time-Out Situations. "Time-Out" is the common assertive statement for use by all crew members. The use of "Time-Out" will:

A7.6.1. Provide a clear warning sign of a deviation or loss of situational awareness.

A7.6.2. Provide an opportunity to break the error chain before a mishap occurs.

A7.6.3. Notify all crewmembers when someone sees the aircraft or crew departing from established guidelines, the briefed scenario, or that someone is simply uncomfortable with the developing conditions.

A7.7. Time-Out Actions. As soon as possible after a "Time-Out" has been called, aircrew will take the following actions:

A7.7.1. Safety permitting, stabilize the aircraft and ensure terrain clearance.

A7.7.2. The initiating crewmember will voice their concerns to the crew.

A7.7.3. The PIC will provide all other crewmembers with the opportunity to voice inputs relative to the stated concerns.

A7.7.4. After considering all inputs, the PIC will direct the course of action.

A7.8. Lost Sight/Blind (not applicable for cell formation). Maneuver away from lead's last known position and transmit "blind" with (altitude). Lead will be directive to ensure altitude separation. If in IMC, initiate lost wingman procedures.