BY ORDER OF THE COMMANDER
AIR EDUCATION AND TRAINING COMMAND

AIR EDUCATION AND TRAINING MANUAL 11-2T-1V3

15 JANUARY 2026

Flying Operations

T-1A OPERATIONS PROCEDURES

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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RELEASABILITY: There are no releasability restrictions on this publication

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OPR: AETC/A3V

Certified by: AETC/A3/6

Pages: 54

This manual implements Air Force Policy Directive (AFPD) 11-2, *Aircrew Operations*, Air Force Instruction (AFI) 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure*, and Air Force Manual (AFMAN) 11-202, Volume 3, *Flight Operations*. This manual establishes standard operational procedures applicable to all civilian employees and uniformed members of the Regular Air Force, Air Force Reserve associate instructor pilots (IPs) and combat systems officers (CSOs) operating the T-1A. This publication does not apply to the Air National Guard (ANG) or the United States Space Force. This publication requires the collection and or maintenance of information protected by the Privacy Act of 1974 authorized by Title 5 United States Code Section 552a, *Records maintained on individuals*, and Department of Defense Instruction (DoDI) 5400.11, *DoD Privacy and Civil Liberties Programs*. The applicable system of records notice (SORN) DoD 0005, Defense Training Records, is available at: **https://pclt.defense.gov/DIRECTORATES/Privacy-and-Civil-Liberties-Directorate/Privacy/SORNs/**. Ensure all records generated as a result of processes prescribed in this publication adhere to Air Force Instruction 33-322, *Records Management and Information Governance Program*, and are disposed in accordance with the Air Force Records Disposition Schedule, which is located in the Air Force Records Information Management System. Refer recommended changes and questions about this publication to the office of primary responsibility (OPR) listed above using the Department of the Air Force (DAF) Form 847, *Recommendation for Change of Product*; route DAF Forms 847 from the field through the appropriate chain of command to Air Education and Training Command Standardization and Evaluation (AETC/A3V). This publication may be supplemented at any level, but all supplements must be routed to the OPR of this publication for coordination prior to certification and approval. The authorities to waive

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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-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.

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

1.3. Deviations. Notwithstanding the requirements of this AETCMAN, 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 flight manual; AETCMAN 11-247, *T-1A Flying Fundamentals,* 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 AETC/A3V information 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 flight manual 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 IP must occupy the other seat with immediate access to a set of flight controls. **(T-2) Exception:** A seat may be vacant when conducting single and/or double seat changes and/or 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 IP at the other set of controls. **(T-2)**

1.6.2. CSO sorties. The minimum crew complement will consist of a current and qualified T-1A instructor pilot in the left seat, and a qualified T-1A instructor CSO, upgrading instructor 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. Passenger-Carrying Sorties. Do not use T-code aircraft for passenger carrying missions unless dictated otherwise in DAFMAN 11-401, *Aviation Management,* and DAFMAN 11-401_AETCSUP, *Aviation Management*. **(T-2)** For all passenger carrying missions, ensure compliance with AFI 24-602V1, *Passenger Movement*, DoDD 4500.09, *Transportation and Traffic Management*, and the joint forces travel regulations. **(T-2)**

Chapter 2

MISSION PLANNING

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

2.2. General Procedures. Accomplish sufficient flight planning to ensure safe mission accomplishment. **(T-2)** See AFMAN 11-202V3 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 AFMAN 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 no later than 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 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 the flight manual, associated directives, or 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 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. Aircrews should use 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, speed brakes, flight controls and engine start. **(T-2)**

3.1.2. Required Publications and Equipment. On all sorties, one aircrew member will carry a complete set of current aircraft-appropriate technical orders (specifically the applicable flight manual and 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)** Aircrews may use approved electronic devices in lieu of paper publications.

3.1.2.1. Aircrews that do not carry paper publications will:

3.1.2.1.1. Comply with MAJCOM and local directives regarding approved electronic device usage.

3.1.2.1.2. Produce local flight crew information files (FCIFs) addressing backup device and battery requirements for flight.

3.1.2.1.3. Carry a minimum of three current/operational electronic flight bags (EFBs) on board the aircraft.

3.1.2.1.4. Utilize mobile device management (MDM) to ensure crewmembers have correct and current publications available.

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], or joint operations graphics [JOG]). **(T-3)** Aircrews may use approved digital sources contained on the EFB in lieu of paper charts. 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-2)** Carry life preservers onboard whenever a life raft is required. **(T-2)** Reference AFMAN 11-301, Volume 1, *Aircrew Flight Equipment (AFE)* 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 AETC Undergraduate Flying Training (AETC/A3F).

3.1.3. CSO-Modified 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 are not certified. Aircrew will not use this data as primary aircraft instrumentation or a primary navigation source. **(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 complement 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)** If the jump seat is occupied, it will be locked in the stowed position until both engines are started. **(T-2)** Using the jump seat to stow paper publications is permitted as long as the restraint belts are used to secure them. **(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 opening the crew entrance door when both engines are running. **(T-2)** Personnel may enter and exit the crew entrance door with the number two (right) engine operating and number one (left) engine shut down.

3.1.6.2. Limit engine power setting during ground operations to approximately 70 percent N_2 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-2)**

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. If the aircraft DD Form 365-4, *Weight and Balance Clearance Form F*, (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 climbout performance specified in 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 1T-1A-1-1, *Flight Manual – Performance Data, USAF Series T-1A Aircraft,* 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. 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 aircraft TO guidance and TO 42C-1-2, *Anti-icing, Deicing, 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-2)** 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-2)** 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 distance. 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-2)** Additionally, minimum usable runway length must be equal to or greater than the applicable touch-and-go distance. **(T-2)** **Note**: TO 1T-1A-1-1 contains touch-and-go distances for aircraft gross weights between 15,500 and 12,000 pounds.

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 Takeoff 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 or equal to 9,000 feet.

3.5.4. Minimum runway width for single-ship takeoffs and landings is 100 feet. **(T-2)**

3.5.5. Minimum runway width for normal formation takeoffs is 150 feet. **(T-2)** 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-2)**

3.5.6. Takeoffs, landings and touch-and-goes will not be accomplished on unplowed runways when ice or snow is present. **(T-2)** Operations on plowed runways are acceptable provided the plowed portion is a minimum of 100 feet wide and meets the minimum length requirements. **(T-2)** Additionally, the runway condition of the plowed surface must be equal to an RCR of 12 or greater. **(T-2)**

3.5.7. Runway Condition Assessment Matrix (RCAM). The definition of RCAM is 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 [RSC], pilot reported braking action, etc.) from the Runway Condition Code (RCC) described in published Field Condition (FICON) Notice to Air Missions (NOTAM). **(T-2)**

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

3.5.7.2. Aircrew will consider RCC of 3 as an RCR of 10. **(T-2)**

3.6. Wind Limitations.

3.6.1. Refer to the applicable flight manual for the maximum crosswind limitation for takeoff and landing on a dry runway.

3.6.2. The maximum crosswind limitation for takeoff and landing on a wet runway is 15 knots. **(T-2)**

3.6.3. The maximum crosswind limitation for takeoff and landing on an icy runway is 10 knots. **(T-2)**

3.6.4. Refer to the applicable flight manual for the maximum tailwind limitation for takeoff and landing.

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) operations, reference DAFMAN 13-204, Volume 3, *Air Traffic Control*, as supplemented by AETC and locally.

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 practice single-engine missed 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, whether 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 bank 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-2)** Maintain 160 KIAS minimum during the pull-up. **(T-2)** On downwind, maintain minimum speeds for fuel weight and configuration. **(T-2)**

3.10. Touch-and-Go Operations:

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

3.10.2. Touch-and-go operations are prohibited with an undergraduate CSO or graduate CSO awaiting follow-on training 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 abort initiation 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 calculated 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 as described in the flight manual 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, braking may be delayed until the point at which runway remaining is greater than or equal to 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 (to include touch-and-go operations). **(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 (PM) duties. **(T-2)** **Exception**: CSOs are authorized taxi to accomplish the applicable portion of the "Taxi" checklist. Additionally, CSOs in CSO right seat (CRS) initial qualification training and CRS-qualified ICSOs 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 miles (SM) or approach minimums, 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 or 300 feet above touchdown zone elevation (TDZE), whichever is higher. For approaches terminating in a circle, the CSO will transfer aircraft control to the pilot no later than 100 feet above approach minimums or 300 feet above airfield elevation, whichever is higher. **(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, missed approach, and circle-to-land procedures and will only perform pilot monitoring duties from the copilot seat. **(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 pilot monitoring duties from the copilot seat. **(T-2)**

3.13.3. Pattern Checklist. If aircrews are transiting between airfields located in close proximity to each other (approximately 15 minutes) and will remain below transition level, they 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**,** crewmembers 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**: Crewmembers 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)** Seat changes will be accomplished as described in AETCMAN 11-247.

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 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 syllabi.

3.13.6. Weather and Altitude Restrictions:

3.13.6.1. Minimum altitude for 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. If descending below 3,000 feet AGL to facilitate a low-level entry or VFR arrival, crews will have a chart that covers the applicable area. **(T-2)** This chart will include current vertical obstruction data. **(T-2)**

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

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

3.13.7. Stalls. Do not practice approach-to-stall training 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 maneuver at approximately 150 KIAS. **(T-2)** Calculate and use 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. Aircrews 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 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, aircrews 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. 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 behind any preceding aircraft and on taxiway center line. **(T-2)** The landing/taxi lights will normally be used during all night taxiing. **(T-2)** **Exception:** Aircrews 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 approaches and patterns, no-flap approaches and patterns, and 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. Before accomplishing single-engine approaches and patterns, no-flap approaches and patterns, or circling approaches at night, IPs must be "familiar" with the airfield. To qualify as "familiar," instructors must have accomplished either T-1A daylight VFR pattern operations or a T-1A 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. **(T-2)** Acceptable forms of glide path guidance are visual lighting systems, precision guidance systems, and 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 from night circling approaches, the only runway required to have glide path guidance is the runway of intended landing. **(T-2)**

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. In addition to restrictions found in AFMAN 11-202V3 and AFMAN 11-202V3_AETCSUP, *Flight Operations,* aircrews will adhere to the following:

3.15.1.1. The T-1A will not be flown in areas of freezing rain or freezing drizzle. **(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 available to avoid thunderstorms by 20 NM at or above FL230 and 10 NM below FL230. **(T-2)**

3.15.2. Destination and alternate filing will be in accordance with AFMAN 11-202V3, AFMAN 11-202V3_AETCSUP, 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 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 AFMAN 11-202V3_AETCSUP, aircrew members may fly published Visual Climb Over Airport (VCOA) procedures with the following restrictions:

3.15.3.2.1. Pilots must complete MAJCOM-approved VCOA training prior to flying the procedure. **(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. Target bank angle during VCOA departure is 30 degrees. **(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. Global Navigation Satellite System (GNSS) Navigation:

3.16.1. The T-1A is 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 flight manual for aircraft certification information). All T-1A aircrews may use RNAV as the primary navigation 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. Avionics Modernization Program (AMP) aircraft meet Technical Standard Orders and comply with Federal Aviation Administration 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)**

3.16.2. Preflight Planning. Prior to flight, T-1A aircrews will:

3.16.2.1. Check Jeppesen® NAVDATA Alerts/Change NOTAMs prior to every flight in which the Jeppesen® database will be utilized. **(T-2)** **Note**: Unit standardization and evaluation organizations will review the Jeppesen® "Notices and Alerts" at least monthly for applicability to local operations located at **https://ww2.jeppesen.com/notices/?fwp_notice_category=navdata&fwp_notice_sub_category=navdata-alerts&fwp_notice_region=united-states&fwp_notice_type=aviation**. **(T-3)**

3.16.2.2. Check predictive receiver autonomous integrity monitoring (RAIM) and review GPS outage NOTAMs prior to utilizing RNAV procedures. **(T-2)** In accordance with AFMAN 11-202V3, if space-based augmentation system (SBAS) is confirmed to be available along the entire route of flight, a predictive RAIM check is not required.

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. RNAV (GPS) Instrument Approach. "DME/DME" and "WAAS" notations on published RNAV instrument procedures are applicable. Aircrew will not fly "RNAV (RNP)" approaches. Suitable procedures for the T-1A will state "GPS Required" or "GNSS." **(T-2)**

3.16.5.1. The T-1A is certified for circling, lateral navigation (LNAV) MDA, LNAV/vertical navigation (VNAV) decision altitude (DA) and localizer performance with vertical guidance (LPV) minima for all RNAV approaches. **(T-2)** Aircrews will not use "GLS" minimums.

3.16.5.2. Aircrews will closely monitor the primary flight display (PFD) and control display unit (CDU) for flight management system (FMS) messages during RNAV approaches. **(T-2)** See applicable flight manual for message descriptions. Aircrews will coordinate for an alternate clearance anytime FMS/GPS integrity is in doubt. **(T-2)**

3.16.5.3. 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)**

3.16.5.4. Aircrews will ensure that once established on an approach, the PFD 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. As a guide, crews will consider aborting the approach if the evaluated distance does not correspond to within 0.1 nautical miles (NM) of the flight information publication (FLIP) published value. **(T-2)**

3.16.5.5. 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., distance to the final approach fix [FAF]). **(T-2)** Do not manually insert a waypoint into the approach. **(T-2)**

3.16.6. RNAV 1 Terminal Procedures. The T-1A is certified for FLIP *published* RNAV 1 (1 NM total system error [TSE]) departure procedures (DP) and RNAV 1 standard terminal arrivals (STAR). 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)**

3.16.6.1. Since RNAV 1 procedures require lateral deviation of no more than 1.0 nm, aircrews must remain within full-scale deflection on the course deviation indicator (CDI) of the electronic horizontal situation indicator (EHSI)/PFD while in the "Terminal" mode, with FMS selected as the navigation source and flight director set to "NAV." **(T-2)**

3.16.6.1.1. Some RNAV 1 terminal procedures may begin or terminate outside of the FMS "Terminal" mode 30 NM area. To fly these procedures, cross track distance must be monitored to ensure lateral accuracy when outside of the "terminal" mode area. **(T-2)**

3.16.6.2. As a guide, crews should consider a course difference of up to 3 degrees acceptable when comparing FMS-loaded RNAV 1 departure or arrival procedures (RNAV STARs and standard instrument departures [SID]) from the aircraft database to the FLIP published courses. **(T-2)**

3.16.6.3. 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)**

3.16.7. RNAV 2 En Route Procedures. The T-1A is certified for FLIP *published* RNAV 2 (2 nm TSE) enroute operations in Required Navigation Performance (RNP) 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)**

3.16.7.1. 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 CDU to ensure the aircraft remains within the 2.0 nm lateral tolerance of the RNAV 2 routing. **(T-2)**

3.16.7.2. As a guide, crews should consider a course difference of up to 3 degrees 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 found in AFMAN 11-202V3. For all published military training routes (instrument routes [IR] and visual routes [VR]), aircrews will comply with the weather requirements found in FLIP AP/1B. **(T-2)** For published slow speed training routes (SR), aircrews will ensure a minimum ceiling of 1,500 feet and 3 SM. **(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 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)** For obstacles exceeding 2,000 feet AGL, aircrews will avoid the obstacle by a lateral distance equal to the AGL height of the obstacle. **(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 FLIP AP/1B for 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 operations area (MOA), the 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 the 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 rejoin 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 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 on a VFR clearance will maintain VFR cloud clearances in accordance with AFMAN 11-202V3.

3.19.2.2. The maximum number of T-1A aircraft in a formation is two. **(T-2)**

3.19.2.3. 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 conditions exceeding light 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. Receiver will maintain 1,000 feet of separation from tanker unless visibility is 1 SM or greater. Once established as a formation in accordance with AETCMAN 11-247, the two aircraft must remain clear of clouds at all times. **(T-2)**

3.20.4. Altitude. Do not conduct simulated AR above FL310. **(T-2)**

3.21. Advisory Calls. In addition to the items below, refer to the applicable flight manual for further required calls. These calls will apply whether using published or CSO minimums.

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

3.21.1.1. Nonprecision Approaches:

3.21.1.1.1. "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.

3.21.1.1.2. "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. "Continue." Call at decision height (DH)/decision altitude (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 threshold elevation/TDZE in accordance with AFMAN 11-202V3.

3.21.1.2.2. "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)** To call "land" at 100 feet, the red termination bars or the red side row bars must be visible and identifiable. **(T-2)**

3.21.1.2.3. "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)**

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

3.21.1.3. On climbout, an advisory call will be made at transition altitude.

3.21.1.4. Descent:

3.21.1.4.1. Transition level.

3.21.1.4.2. 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 heading deviations, altitude deviations in excess of 200 feet, any airspeed deviation in excess of 10 knots 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 procedures. **(T-2)**

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

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

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

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

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

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

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

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

3.23. Non-Towered Airfields: See AETCMAN 11-2T-1, Volume 1, *T-1A Aircrew Training,* for training requirements and AFMAN 11-202V3 for additional requirements. Aircrews will complete a group commander-approved training plan prior to accomplishing any non-towered airfield operations. **(T-2) Exception:** Instrument approaches may be flown to non-towered airfields without completing an approved training plan for the purposes of descending below weather to cancel IFR and proceed VFR to enter a military training route. **(T-2)**

3.23.1. Aircrews will refer to applicable sections of the Code of Federal Regulations (CFR), the 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. Group commanders 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), prior to conducting non-towered airfield operations. **(T-2) Exception:** When accomplishing an instrument approach to a non-towered airfield as described in **paragraph 3.23**, no LOA is required.

3.23.3. Restrictions:

3.23.3.1. Non-towered airfield operations may be conducted in day only. **(T-2) Note:** For the purposes of this paragraph, "operations" is defined as multiple patterns or approaches. This does not preclude a single arrival and landing at night by appropriately-certified aircrews for the purposes of recovery. **(T-2)**

3.23.3.2. Non-towered airfield operations will be flown single ship only. **(T-2)**

3.23.3.3. Overhead patterns may not be flown. **(T-2) Exception:** 479 FTG T-1A aircraft may execute the overhead pattern at home station when the control tower is closed in accordance with course rules as defined in local guidance.

3.23.3.4. 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/or Functional Check Flight Procedures, T-1A*.

3.24.1. Do not conduct actual FCF/ACFs with any other mission except FCF/ACF certification training. **(T-2) Note:** This does not preclude current and qualified FCF pilots from accomplishing FCF test items on normal continuation training (CT) sorties for the purposes of FCF currency.

3.24.2. All FCF/ACF requirements will be accomplished by a fully current and 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 group commander may authorize experienced T-1 instructors who are not FCF-certified pilots to be the additional pilot during an FCF mission.

3.24.3. With group commander 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 to validate specific requirements of the aircraft. **(T-2)**

3.24.5. Touch-and-go landings are not authorized on FCF sorties 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 (or equivalent). **(T-3)**

Chapter 4

OPERATING RESTRICTIONS

4.1. Minimum Equipment List (MEL) Guidance:

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

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 mission requirements, etc. **(T-2)**

4.2.2. Operations group commanders (or equivalent) 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	

Item	Equipment/System	Installed	Required (T-2)	Remarks/Limitations/Exceptions
4	Anti-collision strobes	3	3	
5	Antiskid system	1	1	
6	Angle Of Attack (AOA) system	1	1	
7	AOA, pitot, and static heat system	1	1	If system operation can be physically verified and the master caution annunciators are operative, aircrew may continue with inoperative indicator lights on the overhead panel.
8	Automatic direction finder (ADF)	1	0	
9	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.
10	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.
11	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.
12	Cockpit Sun Visors	2	0	May be inoperative or missing provided there are no visual restrictions to the crew
13	DME	3	3	

Item	Equipment/System	Installed	Required (T-2)	Remarks/Limitations/Exceptions
14	Electronic flight instrument system	1	1	Includes two primary flight displays, one multifunction display (MFD), two display control panels, one course heading panel, and a cursor control panel.
15	Electronic oil dipstick	2	0	If inoperative, check oil manually.
16	Engine fire detection system	2	2	
17	Engine synchronizer system	1	0	
18	Flight data recorder	1	1	Failure noted with either an "SDRR" or "FDMU" message. Aircrews may take off with the "AMU 80%" message.
19	FMS	1	1	
20	GPS	1	0	GPS is required for air refueling, GPS-defined MOAs, and if planning or filing RNAV procedures. Additionally, if GPS is inoperative, notify ATC of not being a /G designation.
21	Enhanced Ground Proximity Warning System (GPWS) and Terrain Awareness Warning System (TAWS)	1	1	May be inoperative for day visual meteorological conditions (VMC)-only mission, unless the mission includes low-level navigation.
22	Intercom system	1	1	
23	Landing lights	2	1	Both lights must be operational for night missions.
24	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 navigation lights will be operational for home station departure.

Item	Equipment/System	Installed	Required (T-2)	Remarks/Limitations/Exceptions
25	Oxygen system	1	1	Additionally, masks must be operational with a current inspection in all active crew positions for the mission being flown.
26	Radio altimeter	1	0	Required for low-level navigation, night, or IMC pattern operations with ceilings below 1,000 feet.
27	Rudder boost	1	1	
28	Stall warning system	2	2	The stall warning system includes “stick shaker,” aural warning, glare shield lights and annunciator lights.
29	Tactical Air Navigation (TACAN)	1	1	Air-to-air functionality (both bearing and distance measuring equipment [DME]) must be operable for air refueling, airdrop, and formation operations.
30	Traffic Alert and Collision Avoidance System (TCAS)	1	1	
31	UHF radio	1	1	
32	Very high frequency Omnidirectional Range station (VOR) and ILS	2	2	Not required for day VMC local sortie, provided GPS is operational.
33	VHF radio	1	1	
34	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.
35	Windshield heat	2	0	Required for flight above FL 180, flight in/through IMC above the freezing level, or forecast/reported icing conditions.
36	Windshield wipers	2	0	Required if precipitation is forecast or reported ±1 hour of estimated time of departure or estimated time of arrival.
37	Wing inspection lights	2	0	Both lights required at night.

Item	Equipment/System	Installed	Required (T-2)	Remarks/Limitations/Exceptions
38	Yaw damper	1	0	Required for cross-country missions and flight above FL280.

JEFFREY W. NELSON, Brigadier General, USAF
Director of Operations and Communications

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

5 U.S.C. §552a, *Records maintained on individuals*

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TO 1T-1A-6, *Scheduled Inspection and Maintenance Requirements, T-1A Aircraft*, 15 May 2024

TO 1T-1A-6CF-1, *Acceptance and Functional Check Flight Manual, USAF Series T-1A Aircraft,* 1 August 2023

TO 42C-1-2, *Anti-Icing, Deicing and Defrosting of Parked Aircraft,* 15 January 2024

Prescribed Forms

None

Adopted Forms

DAF Form 847, *Recommendation for Change of Publication*

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

Abbreviations and Acronyms

A/A—air-to-air

ACF—acceptance check flight

ADF—automatic direction finder

ADS-B—automatic dependent surveillance-broadcast

AETCMAN—Air Education and Training Command Manual

AFI—Air Force instruction

AFMAN—Air Force Manual

AFPD—Air Force policy directive

AIM—Aeronautical Information Manual

AGL—above ground level

AHAS—Avian Hazard Advisory System

AMP—avionics modernization program

AOA—angle of attack

AR—air refueling

ARCP—air refueling control point

ARCT—air refueling control time

ARIP—air refueling initial point

ASDA—accelerate stop distance available

ASRR—Airfield Suitability and Restrictions Report

ATC—air traffic control

BAM—bird avoidance model

CDI—course deviation indicator

CDU—control display unit

CFL—critical field length

CRM—cockpit/crew resource management

CRS—combat systems officer right seat

CSO—combat systems officer

DA—decision altitude

DH—decision height

DME—distance measuring equipment

DNIF—duties not involving flying

DP—departure procedure

EADI—electronic attitude direction indicator

EFB—electronic flight bag

EGNOS—European Geostationary Navigation Overlay Service

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

FCF—functional check flight

FCIF—flight crew information file

FICON—field condition

FIH—Flight Information Handbook

FDMU—flight data memory unit

FL—flight level

FLIP—flight information publication

FMS—flight management system

FOD—foreign object damage

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

IR—instrument route

JMPS—Joint Mission Planning System

JOG—Joint Operations Graphic

KIAS—knots indicated airspeed

KIO—knock-it-off

LDA—landing distance available

LNAV—lateral navigation

LOA—letter of agreement

MAP—missed approach point

MARSA—military assumes responsibility for the separation of aircraft

MCT—maximum continuous thrust

MDA—minimum descent altitude

MDM—mobile device management

MEL—minimum equipment list

MFD—multifunction display

MIF—maneuver item file

MOA—military operations area

NAS—National Airspace System

NM—nautical mile

NOTAM—notice to air missions

OG—operations group

ONC—Operational Navigation Chart

OPR—office of primary responsibility

ORM—operational risk management

PAR—precision approach radar

PBN—performance-based navigation

PF—pilot flying

PFD—primary flight display

PIC—pilot in command

PM—pilot monitoring

RAIM—receiver autonomous integrity monitoring

RCAM—runway condition assessment matrix

RCC—runway condition code

RCR—runway condition reading

RNAV—area navigation

RNP—required navigation performance

RSC—runway surface condition

RSRS—reduced same runway separation

RSU—runway supervisory unit

SA—situational awareness

SBAS—space-based augmentation system

SDRR—signal data recorder reproducer

SII—special interest item

SM—statute mile

SORN—system of records notice

SR—slow speed training route

STAR—standard terminal arrival

TACAN—tactical air navigation

TCAS—Traffic Alert and Collision Avoidance System

TCTO—Time Compliance Technical Order

TDZE—touchdown zone 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

Office Symbols

AETC/A3/6—Air Education and Training Command Directorate of Operations and Communications

AETC/A3V—Air Education and Training Command Standardization and Evaluation

Terms

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

Combat Systems Officer (CSO)—"CSO" refers to students enrolled in Undergraduate Combat Systems Officer Training (UCT) and instructor combat systems officer (ICSO) upgrade training as well as qualified CSOs and ICSOs.

Student—refers to any crewmember enrolled in any formal pilot training course, any formal pilot instructor training course, UCT, and ICSO upgrade training.

Attachment 2

SINGLE-SHIP BRIEFING GUIDE

A2.1. Pre-mission:

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

A2.1.2. Prerequisites met or opted.

A2.1.3. Grounded (duties not involving flying [DNIF], previous sortie Unsatisfactory).

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), NOTAMs, and takeoff and landing data (TOLD).

A2.2.9. Alternate mission and profile.

A2.2.10. FCIF, ops notes, read file, boldface, 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 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 events 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. Area 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 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 CAP.

A3.1.2. Prerequisites met and opted.

A3.1.3. Grounded (DNIF, Unsatisfactory).

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 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. 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, overhead).

A3.8.3. Landing (low approach, touch and go, 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. 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. Applicable flight manual checklist 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/MISSION DEBRIEFING GUIDE

A5.1. Ground Procedures.

A5.2. Takeoff/Join-Up/Departure.

A5.3. En Route Procedures.

A5.4. Recovery/Landing/After Landing.

A5.5. General:

A5.5.1. Special Interest Items.

A5.5.2. Radio Procedures.

A5.5.3. Flight Discipline/Effectiveness.

A5.6. Mission Accomplishment/Analysis:

A5.6.1. Mission Reconstruction.

A5.6.2. Learning Objectives Achieved.

A5.6.3. Lessons Learned.

A5.6.4. Recommendations for Improvements.

A5.7. Comments/Questions.

Attachment 6

MISSION CHECKLIST PROCEDURES

A6.1. Tanker air refueling checklists. Not required for subsequent rendezvous

Table A6.1. 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:

(Receiver between 1 NM 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:

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).

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 NM and 1 NM).

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:

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:

***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 Minimums - 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:

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 Checklist after low-level exit and prior to approach/pattern operations.*

A6.4. UCT Checklist Procedures.

Table A6.9. Low-Level Entry Checklist:

***Note**: Accomplish in lieu of the descent checklist for low-level operations.*

1. Crew Briefing - COMPLETED (CP)
2. Radio Altimeter Minimums - 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:

1. Flaps - UP (P, CP)
2. Navaids - SET (P, CP)
3. Altimeters - SET (P, CP)
4. Transponder - SET (CP)
5. Ignition Switches - AS REQUIRED (CP)
6. Low-Level Exit Checklist - COMPLETED (CP)
***Note**: Accomplish the Descent Checklist after low-level exit and prior to approach/pattern operations.*

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. 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, minimum 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. 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.