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Supplement**

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**Flying Operations**

**T-38 OPERATIONS PROCEDURES**

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**SUMMARY OF CHANGES**

This document has been substantially revised and must be completely reviewed. Major changes include: deletes reference to AETCTTP 11-1, *Employment Fundamentals T-38C/Introduction to Fighter Fundamentals (IFF)* (para 1.4.1), clarified TOLD guidance to incorporate existing declared distances FCIF (para. 2.2.2); changed 19 AF/DO to AETC/A3V; deleted pre-ESUP TOLD reference (para 2.2.2.1); added navigation data card loading procedures (para 2.6);

added MAJCOM guidance for low level map preparation (para 2.3.3.2); added DD landing distance guidance (para 3.7.3); added DD guidance for single-ship rolling takeoffs (para 3.7.6); clarified minimum runway length guidance (para 3.7.9); added STAR restriction to instrument procedures (para 3.19.11.3); clarified restrictions on beginning an instrument procedure with respect to ceiling/visibility and position on the procedure (para 3.19.11.4); permits current and qualified non-FCF T-38 IPs to fly on FCF flights (para. 3.37.1).

**1.1. Scope.** Within AETC, certain procedures may be identified as only applicable to or not applicable (NA) to undergraduate pilot training (UPT), Euro-North Atlantic Treaty Organization (NATO) joint jet pilot training (ENJJPT), undergraduate flying training (UFT) (both UPT and ENJJPT), pilot instructor training (PIT) for UFT instructor duty, or introduction to fighter fundamentals (IFF).

2.2.2. For all T-38 operations at civil and joint-use fields, pilots will apply DDs in accordance with AFMAN 11-217 Vol 1 paragraph 6.5.4.7. TOLD numbers should be calculated, then compared to the Declared Distances (DD) to ensure an airfield is appropriate for T-38 operations. T-38 aircrews will use the following procedures for computing takeoff and landing data (TOLD): (**Note:** AETC/A3V may approve TOLD software which complies with this paragraph and will notify OGVs of all approved TOLD software.)

2.2.2.1. (**Added**) Pilots may use the appropriate flight manual performance charts or AETC/A3V-approved TOLD software to determine TOLD based on 12,800 (dual) or 12,600 (solo) pounds or actual aircraft gross weight prior to takeoff. If using actual aircraft gross weight, compute it as follows: Add the aircraft empty gross weight obtained from the aircraft weight and balance (Form F), plus the weight of fuel (4,006 pounds total fuel, which includes up to 48 pounds of trapped fuel), plus the weight of liquid oxygen (LOX) (approximately 26 pounds), plus aircrew equipment (28 pounds per pilot for the harness and miscellaneous equipment), plus actual pilot weight (245 pounds per pilot maximum), plus optional WSSP (110 pounds) and contents (up to 140 pounds), external stores (according to the flight manual), minus start/taxi fuel (approximately 200 pounds).

2.2.2.1.1. (**Added**) With squadron supervisor approval, pilots may reduce gross weight by burning down fuel to a predetermined useable fuel weight. Reduction of gross weight by burning fuel must be completed before taking the runway for takeoff and will not include a reduction for fuel used after afterburner light during takeoff roll. This reduction can be applied to either the computed actual weight or the 12,800 (dual) or 12,600 (solo) pound weights. If not using actual weights, assume the takeoff fuel weight for takeoff at 12,800 (dual) or 12,600 (solo) pounds is 3,800 pounds.

2.2.2.1.2. (**Added**) Pilots will ensure the calculated takeoff roll is less than or equal to Take-off Run Available (TORA) and meets the restrictions in AFI 11-2T-38 Vol 3 paragraph 3.7.3. The percentage of takeoff distance restriction (for both formation and single-ship takeoffs) will be applied to the runway dimensions, not the TORA.

2.2.2.1.3. (**Added**) Pilots will ensure the calculated Critical Field Length (CFL)

is less than or equal to accelerate-stop distance available (ASDA).

2.2.3. Student pilots will only use flight planning software according to current training syllabus guidance.

2.3.3.2. AETC T-38 aircrew will reference AETCMAN 11-251, Volume 1, *T-38 Flying Fundamentals*, for low level map preparation guidance.

## 2.6. (Added) Navigation Data Card Loading Procedures.

2.6.1. (Added) Use of the Navigation Data Verification Tool (NVT) IAW the T-38C Data Transfer Cartridge-Video Data Transfer System (DTC-VDTS) Loading Checklist every Digital Aeronautical Flight Information File (DAFIF) cycle is mandatory for Block 9 T-38C operations. This checklist can be accessed on the AETC/A3VU SharePoint® site at <https://eis.aetc.af.mil/hq/A23/A3V/A3VU/default.aspx>.

2.6.1.1. (Added) Units will use the T-38C DTC-VDTS Loading Checklist to build cartridges using Joint Mission Planning System, validate using the NVT (Block 9 only) and distribute validated cartridges to aircrew.

2.6.1.2. (Added) Units will report all NVT-detected (Block 9 only) faults during Tests 3 through 5. Rename the NVT Test Report file (NavDataLog.txt with the OG identifier, for example, NavDataLog12.txt. Forward a copy of the NVT Test Report to AETC/A3VU via email to [aetc.a3vu@us.af.mil](mailto:aetc.a3vu@us.af.mil) and the squadron chief of stan/eval. Aircrew discovering errors through comparison to current FLIP will forward them as described above.

2.6.1.3. (Added) The DAFIF data on the card must match the DAFIF received from the National Geospatial Agency (NGA) for the card to be used in the aircraft. Blank cards can be used in the aircraft to download mission data to the debrief software.

2.6.1.4. (Added) Aircraft with expired databases are allowed to be used according to AFMAN 11-217 Volume 1. However, T-38C area navigation (RNAV) operations are prohibited with an expired database.

2.6.1.5. (Added) Units are allowed to use International Civil Aviation Organization Data geo-regions to avoid exceeding the file limit size on the cards. Units will use the NVT (Block 9 only) to validate the cards.

2.6.1.6. (Added) Units will ensure positive control and security of all cartridges. Each squadron will have procedures in place to sign cartridges out to aircrew and back in to a designated control authority. The unit will account for all cartridges at the termination of daily flying operations.

2.6.1.7. (Added) Units will ensure each DTC is virus-scanned prior to use on the aircraft IAW with the T-38C System Security Plan.

3.2.4. No items will be placed under ejection seats.

3.2.6. (Added) Aircrews should use extreme caution when stowing items in the rear cockpit. If it is necessary to place items on or near the rear cockpit breaker panels, they should not exceed 8 inches in height to prevent interference with the balance weight arm. After closing the canopy with items stored near the rear cockpit circuit breaker panels, aircrew should visually confirm clearance exists between the balance weight arm and the

stowed object. When the balance weight arm is fully closed, the bottom of the arm is 10 inches above the rear cockpit breaker panels.

3.2.7. **(Added)** The aircraft commander will ensure at least one operative flashlight is available in each occupied cockpit for night sorties.

3.2.8. **(Added)** G-suits are required for all sorties except instrument or navigation. G-suits are required for low level sorties.

3.5.1. **[For UFT only]** Solo student pilots will stop the aircraft at the end of the runway, or an approved area, prior to removing or reinstalling their ejection seat and canopy safety pins. When not in formation, solo student pilots will make a radio call to the controlling agency stating the ejection seat is armed prior to being cleared for takeoff.

3.5.2. As a minimum, use the VDTS to record mission tasks (military operating area (MOA) transition and formation work; air-to-air and air-to-surface training; low-level flight; pattern work if applicable) as well as any aerial events (flyovers, aerial reviews, aerial demonstrations).

3.7. **Takeoff.** During engine run up, the crewmember not in control of the aircraft will guard and be ready to assume control of the brakes in case of rudder pedal rod end failure.

3.7.2. AETC pilots will use takeoff performance data for go/no-go decision making as follows: (**Note:** The pilot in command makes the decision to continue or abort a takeoff (go/no-go decision) based on available information; for example, the speeds and distances determined in preflight planning, environmental factors; runway length and condition; barrier capability; required climb gradient; the actual speed when the event occurs; and the severity of event. A go/no-go speed is a reference to aid the pilot in decision making.)

3.7.2.1. **(Added)** Operations With a Remotely Controlled BAK-15:

3.7.2.1.1. **(Added)** When decision speed (DS) is less than or equal to refusal speed with engine failure (RS-EF), use RS-EF as go/no-go speed. Aborts for other than engine failure (e.g., generator lights, fire lights, etc.) initiated between refusal speed with both engines operating (RS-BEO) and RS-EF may result in overrunning the runway surface or barrier engagement.

3.7.2.1.2. **(Added)** When DS is greater than RS-EF:

3.7.2.1.2.1. **(Added)** If DS is less than or equal to takeoff speed (TOS), approval of the OG/CC is required. After receiving approval, takeoffs are allowed as long as the performance data results in a valid DS and single engine TOS (SETOS). Use TOS as the go/no-go speed. The squadron supervisor will brief the aircrew and the supervisor of flying (SOF) on the situation and ensure the crew has the most current data. Only a rated pilot or a student pilot under the supervision of an instructor pilot (IP) in the aircraft may perform the takeoff. **Note:** For some extreme combinations of temperature and pressure altitude, the performance charts will not yield a valid DS or SETOS. This occurs on the DS chart where the curves on the gross weight plot do not extend far enough upwards and on the SETOS chart where the gross weight plot is labeled "SINGLE ENGINE TAKEOFFS NOT

POSSIBLE.” Takeoffs in this situation are prohibited.

3.7.2.1.2.2. **(Added)** If DS is greater than TOS, takeoffs are not authorized.

3.7.2.2. **(Added) Operations Without a BAK-15:** (**Note:** This includes operations when the remote control equipment is not operating and the BAK-15 is lowered, and operations with the MA-1A.)

3.7.2.2.1. **(Added)** When DS is less than or equal to RS-BEO, use RS-BEO as go/no-go speed. Aborts for other than engine failure (e.g., generator lights, fire lights, etc.) initiated above RS-BEO may result in overrunning the runway surface.

3.7.2.2.2. **(Added)** When DS is greater than RS-BEO and less than or equal to RS-EF, OG/CC approval is required. Use RS-EF as the go/no-go speed. Only a rated pilot or a student pilot under the supervision of an IP in the aircraft may perform the takeoff. Aborts for other than engine failure (e.g., generator lights, fire lights, etc.) may result in overrunning the runway surface if initiated above RS-BEO.

3.7.2.2.3. **(Added)** When DS is greater than RS-EF, takeoffs are not authorized.

3.7.2.3. **(Added) Operations With a Raised, Non-remotely Controlled BAK-15:** (**Note:** Manually raising the BAK-15 when the remote control equipment is not operating may allow operations to continue in some circumstances.)

3.7.2.3.1. **(Added)** When DS is less than or equal to RS-EF, use RS-EF as go/no-go speed.

3.7.2.3.2. **(Added)** When DS is greater than RS-EF and less than TOS, takeoffs are allowed with the OG/CC approval as long as the performance data results in a valid DS and SETOS. Use SETOS as the go/no-go speed. The squadron supervisor will brief the crew and the SOF on the situation and ensure the crew has the most current data. Pilots will delay rotation until 155 knots calibrated airspeed (KCAS), and ensure the nose tire is off the runway no later than 174 knots ground speed/indicated airspeed (KGS/KIAS) respectively. Only a rated pilot or a student pilot under the supervision of an IP in the aircraft may perform the takeoff.

3.7.2.3.3. **(Added)** When DS is greater than or equal to TOS, takeoffs are not authorized.

3.7.3. **(Added)** Pilots will ensure the calculated landing distance is less than or equal to landing distance available (LDA). If the calculated landing distance is less than LDA, pilots can use the actual runway length for landing in accordance with runway dimensions found in the IFR Supplement or approach diagram and the restrictions in AFI 11-2T-38 Vol 1 paragraph 3.32. and paragraph 3.7.9 of this publication. The 80% of landing distance restriction in AFI 11-2T-38 Vol 3 paragraph 3.32 will be applied to the runway dimensions, not LDA.

3.7.6. Single-ship rolling takeoffs are authorized during daylight hours only. Single-ship rolling takeoffs can be accomplished as a single aircraft or within a flight, i.e. separate aircraft within a flight accomplishing a rolling takeoff behind preceding aircraft in the

flight. Prior to performing a rolling takeoff, the pilot must consider TOLD with a runway length 300 feet less than the available runway. If using DDs, subtract 300 feet from either the runway length or from both ASDA and TORA for calculations IAW para [2.2.2](#)

3.7.8. **(Added)** When aircraft operate on runways with a remotely controlled arresting system, pilots will remain on the frequency of the agency, either tower or runway supervisory unit (RSU) that controls the runway and the arresting system until safely airborne. The barrier will be in the lowered position and will be raised only when the pilot calls for it. **Note:** The BAK-15 is the only arresting system suitable for stopping an aircraft with a travel pod. The MA-1A is suitable only for a clean aircraft.

3.7.9. **(Added)** The minimum runway length required for operations is 8,000 feet. **Exception:** The OG/CC may approve operations on runways at least 7,000 feet long.

3.7.10. **(Added)** Aircraft must have a full fuel load for each mission. This requirement may be waived by the OG/CC. **(Exception:** See paragraph [2.2.2.1.2](#) of this publication.)

3.8. **Formation Takeoff.** Use at least 50 feet of wingtip clearance for engine run-up with a solo in any position.

3.8.1. Single-ship TOLD will be used when calculating formation takeoff data.

3.10.4. Unless specifically stated in the exercise or maneuver description, perform all maneuvers with gear and flaps in the retracted position.

3.10.7. **(Added)** The following additional maneuver parameters apply (paragraphs [3.10.7.1](#) through [3.10.7.5.7](#)):

3.10.7.1. **(Added)** Supersonic flight will be performed in accordance with AFI 13-201, *Airspace Management*, and local supplements thereto.

3.10.7.2. **(Added)** Minimum altitudes are as follows:

3.10.7.2.1. **(Added)** For stalls or slow flight, 8,000 feet AGL. Maximum altitude is flight level (FL) 200; power setting 80 percent minimum.

3.10.7.2.2. **(Added)** For unlimited air combat maneuvering (ACBT), 5,000 feet AGL. For all other aerobatic maneuvers, 8,000 feet AGL.

3.10.7.3. **(Added)** Accomplish practice nose high recoveries or instrument unusual attitudes below FL 240 and in visual meteorological conditions (VMC).

3.10.7.4. **(Added)** Apply the following operating restrictions above FL 350.

3.10.7.4.1. **(Added)** For flight above FL 350, aircrew will use the minimum Mach number calculated from the TO 1T-38C-1-1CL-1.

3.10.7.4.2. **(Added)** Do not fly formation above FL 350.

3.10.7.4.3. **(Added)** Do not fly above FL 390 except in an emergency (for example, divert). **Exception:** Conduct the maximum altitude checks IAW TO 1T-38C-6CF-1, *Acceptance and Functional Check Flight Procedures Manual*.

3.10.7.5. **(Added)** Prohibited maneuvers are as follows:

3.10.7.5.1. **(Added)** Practice no-flap patterns and landings with more than 2,500 pounds of fuel.

3.10.7.5.2. **(Added)** Practice single-engine circling approaches or overhead patterns. **Note:** For overhead patterns to set up a practice single-engine go around, use both throttles until rolling out on final.

3.10.7.5.3. **(Added)** Practice no-flap full-stop landings.

3.10.7.5.4. **(Added)** Practice minimum roll landings.

3.10.7.5.5. **(Added)** Practice inflight engine shutdowns other than FCF flown by qualified FCF pilots or during FCF upgrade sorties.

3.10.7.5.6. **(Added)** Formation touch-and-go landings.

3.10.7.5.7. **(Added)** Closed and low-closed traffic patterns immediately after takeoff.

3.12.1. At a minimum, accomplish a 90-degree turn at 4 Gs and a 180-degree turn at 5 Gs. UFT and PIT pilots will accomplish a G-awareness exercise when maneuvers in excess of 4 Gs are anticipated. The G-awareness exercise requires a discernible horizon with sufficient visual cues to perform the exercise. In the event a G-awareness exercise cannot be accomplished, flight leads will modify the flight profile as appropriate.

3.12.2. All pilots have responsibility for deconfliction during a G-awareness exercise. Flight leads will brief the potential conflicts and the transition of the “visual” during line abreast 180-degree G-awareness turns.

3.13.2. Refer to **Attachment 14** for UFT and PIT.

3.15.7. **(Added)** Maximum flight size is four aircraft unless waived.

3.15.8. **(Added)** Over-the-top maneuvers will not be flown in close trail formation.

3.16.1. Refer to **Attachment 14** for UFT and PIT training rules. **Note:** Refer to AFI 11-214, *Air Operations Rules and Procedures*, for IFF training rules.

3.17.3. Unless safety or circumstances dictate otherwise, a chase aircraft will low-approach no lower than 300 feet above ground level (AGL).

3.19.9. **Icing Restrictions.** Do not fly in known or reported icing conditions. Do not cruise in forecast icing conditions. T-38 aircrews will request complete icing condition forecasts, to include trace icing for the entire route of flight when receiving a preflight weather briefing via any source. Operations group commanders will ensure local weather procedures provide T-38 supervisors and crews with adequate trace icing forecasts.

3.19.10. **(Added) Pilot Weather Categories (PWC).** PWCs are designed to reduce the exposure of pilots with limited experience to the risks inherent during periods of low ceiling and visibility. **Table 3.1** specifies the PWC minimums.

3.19.10.1. **(Added)** When calculating total time for the purpose of PWC, do not include student, UFT, or “other” flight time. Hours in an assigned aircraft may include all series or mission types of that aircraft.

3.19.10.2. **(Added)** Assignment of PWC 1 status is dependent on the pilot’s demonstrated knowledge and performance in flight under PWC 2 operations and in aircrew training devices with low-visibility capability. Before assigning PWC 1, a

PWC 1 pilot must evaluate the pilot's instrument proficiency in the simulator or aircraft.

3.19.10.3. **(Added)** Document certification of PWC 1 IAW AFI 11-202, Volume 1.

3.19.10.4. **(Added)** PWC 1 minimums apply to all PWC 2 pilots for approaches at the home field. If an IP is on board, aircrews may use the IP's PWC.

3.19.10.5. **(Added)** T-38A pilots converting to the T-38C will be assigned PWC 2 until achieving a minimum of 25 hours in the T-38C and meeting the criteria listed above for PWC 1.

**Table 3.1. (Added) PWCs.**

<b>I T E M</b>	<b>A  PWC</b>	<b>B  Minimum Flying Hour Criteria</b>	<b>C  Takeoff and Approach Ceiling/Visibility Minimums (Note)</b>
<b>1</b>	1	Experienced IAW AFI 11-2T-38 Volume 1	Suitable published minimums.
<b>2</b>	2	Inexperienced IAW AFI 11-2T-38 Volume 1	Suitable published minimums <u>or</u> 300 feet ceiling and 1 mile visibility (runway visual range 5,000 feet), whichever is greater.
<b>Note:</b> Use the approach end runway visual range to determine takeoff and landing minimums.			

3.19.11. **(Added) Instrument Flight Rules (IFR).** In AETC, the following requirements apply to IFR (paragraphs [3.19.11.1](#) through [3.19.11.5](#)):

3.19.11.1. **(Added)** Takeoff minimums are specified in [Table 3.1](#) Base the decision to launch a local sortie on the existing weather and forecast for planned landing plus 1 hour. Base the decision to launch nonlocal sorties on the existing weather at takeoff time.

3.19.11.2. **(Added)** Do not file to a destination unless the ceiling and visibility for the estimated time of arrival, plus or minus 1 hour, is at or above the appropriate PWC or suitable published minimums, whichever is greater. See [Table 3.1](#)

3.19.11.3. **(Added)** Do not commence a STAR, penetration, en route descent, or approach unless existing ceiling and visibility meet the requirements of [Table 3.1](#)

3.19.11.4. **(Added)** If weather is reported below the required PWC or published minimums (ceiling or visibility) after commencing a STAR/penetration/en route descent or receiving radar vectors for an approach or established on any segment of an approach prior to the missed approach point (MAP), the pilot may continue the approach to the PWC or published minimums, whichever is higher. The pilot will ensure the aircraft has sufficient fuel to go missed approach and land at the alternate airfield with required reserves. The PWC decision height or minimum descent

altitude will be determined by reference to the touch-down-zone elevation (TDZE) or threshold elevation (THRE), whichever is present on the instrument approach procedure, for straight-in approaches and field elevation for circling approaches. Use field elevation if TDZE or THRE is unavailable. The pilot may descend below the decision height or minimum descent altitude if (1) the aircraft is in a position to make a normal approach to the runway of intended landing, and (2) the pilot can clearly see the approach threshold of the runway, approach lights, or other markings identifiable with the approach end of the runway. In all cases, the pilot will comply with the last clearance received until obtaining a revised clearance. **CAUTION:** The use of PWC minimums on a precision approach may require a pilot to execute a missed approach prior to the published decision height. In these instances, upon reaching PWC minimums and making the decision not to continue the approach, the pilot should start a climb immediately while proceeding to the nonprecision missed approach point (MAP). On reaching the nonprecision MAP, the pilot should continue with the published missed approach procedure.

3.19.11.5. **(Added)** When flying instrument approaches in VMC, pilots may fly down to approach minimums if the runway environment is in sight when reaching applicable PWC minimums. Pilots must acknowledge reaching PWC minimums and state their intentions to their crewmembers if continuing to published approach minimums.

3.20.9. **(Added)** The following additional low-altitude procedures apply (paragraphs **3.20.9.1** through **3.20.9.3**):

3.20.9.1. **(Added)** Conduct low altitude training no earlier than 30 minutes after sunrise (1 hour mountainous terrain), and exit the low altitude structure no later than 30 minutes prior to sunset (1 hour mountainous terrain).

3.20.9.2. **(Added)** [UFT and PIT only] Single-ship low-altitude training will be dual.

3.20.9.3. **(Added)** The maximum airspeed for UFT and PIT low-level operations is 420 knots.

3.21.1. Completion of an IP course clears SUPT, ENJJPT, and IFF IPs to fly or instruct low-level navigation or formation missions (without offensive air-to-air employment or threat reaction) down to 500 feet AGL. See AFI 11-2T-38, Volume 1, AETC Supplement, *T-38 Aircrew Training*, Attachment 6, for additional IFF training.

3.21.4. **(Added)** The minimum altitude for flying visual flight rules (VFR) point-to-point navigation missions dictated by operational or training requirements is 3,000 feet AGL.

3.23.7. **(Added)** The following additional night operations procedures apply (paragraphs **3.23.7.1** through **3.23.7.4**):

3.23.7.1. **(Added)** Fly night overhead patterns only at the home base. (Kelly Field is included for the 12th Operations Group.)

3.23.7.2. **(Added)** All night landings require operational glidepath guidance (precision approach or visual glidepath guidance) as follows:

3.23.7.2.1. **(Added)** Unless required by a formal course syllabus or training associated with instructing that syllabus, the preferred night approach procedures (in descending order) are as follows:

3.23.7.2.1.1. **(Added)** Precision approach.

3.23.7.2.1.2. **(Added)** Nonprecision approach with an associated visual descent path indicator.

3.23.7.2.1.3. **(Added)** VFR straight-in.

3.23.7.2.1.4. **(Added)** VFR rectangular pattern.

3.23.7.2.2. **(Added)** When available, use a visual descent path indicator to monitor glide slope position during visual approaches. Also use the instrument landing system (ILS) glide slope if available.

3.23.7.3. **(Added)** All descents below a minimum descent altitude on a nonprecision approach require an operational visual approach system.

3.23.7.4. **(Added)** The instrument straight-in portion of a circling approach is allowed. However, the straight-in approach must terminate in either a missed approach or a transition to visual approach guidance for landing; for example, visual approach slope indicator (VASI) or precision approach path indicator (PAPI).

3.24. **Approaches and Landings.** *(For UFT only)* When airborne and before moving the gear handle, the pilot flying the aircraft will make an intercockpit “gear clear” call and pause momentarily before moving the gear handle. Prior to a student’s initial solo, the IP will acknowledge “clear” before the student moves the gear handle. On all other sorties, “gear clear” is an advisory call only.

3.26.2. For parallel runway configurations that do not allow for 4,000 to 6,000 feet of lateral spacing, local procedures can dictate spacing to a minimum of 2,000’ of lateral spacing.

3.33. **(Added) Touch-and-Go Landings.** The maximum crosswind for single-ship touch-and-go landings is 25 knots for a dry runway.

3.34. **(Added) Extended Daylight.**

3.34.1. **(Added)** Extended daylight is defined as the period 15 minutes prior to official sunrise to 15 minutes past official sunset. For local training only, daylight traffic pattern and MOA operations are in effect during the extended daylight period.

3.34.2. **(Added)** All maneuvers normally accomplished during normal daylight hours may be performed within the extended daylight window, including solo syllabus sorties. Under certain weather conditions, such as low ceiling and visibility, the SOF will decide if maneuvers are appropriate or safe during the times defined in paragraph [3.34.1](#)

3.35. **(Added) Bat Procedures at JBSA-Randolph.** Approval from the home OG/CC is required to arrive or depart during periods of increased bat activity as defined in Area Planning 1.

3.36. **(Added) Operating in High Wind or Sea States.** Units will restrict their flying operations when high winds or sea states would be hazardous to aircrew members in ejection

situations. Local training flights are not permitted over land when steady state surface winds (forecast or actual) in training or operating areas exceed 35 knots. In training or operating areas, overwater training flights will not be permitted when forecast or actual wave heights exceed 10 feet or surface winds exceed 25 knots. This is not intended to restrict operations when only a small portion of the route or area is affected. If possible, alter mission plan to avoid the area. The OG/CC or equivalent is the waiver authority.

3.37. **(Added)** Functional Check Flight (FCF) Restrictions:

3.37.1. **(Added)** FCFs will not be conducted with other types of missions except FCF continuation training, FCF upgrade training, or FCF certification flights. All FCF requirements will be accomplished by an FCF pilot or an FCF pilot in training status with an FCF IP on board. The SQ/CC may authorize a current and qualified T-38 IP to fly in the RCP as a crewmember to assist on the flight, but non-FCF T-38 IPs will not fly any FCF checks.

3.37.2. **(Added)** FCFs may recover at home station when originating from AETC auxiliary fields or from bases within the local flying area.

3.37.3. **(Added)** FCF pilots will not practice instrument approaches or other AETC syllabus maneuvers not in compliance with TO 1T-38C-6CF-1 on FCF missions unless required to check the aircraft. FCF pilots will ensure instrument hoods or vision-restricting devices are not installed in FCF aircraft.

3.37.4. **(Added)** FCF pilots will ensure rear seat publications and seat packs are removed before solo FCFs.

3.37.5. **(Added)** FCF pilots will not accomplish touch-and-go landings on an FCF sortie unless required to complete the FCF according to TO. 1T-38C-6CF-1.

3.37.6. **(Added)** The commander who owns the aircraft may approve AETC FCF pilots to perform required FCFs on transient AETC aircraft. All FCFs on AETC aircraft will be flown by AETC or 415th Flight Test Flight FCF pilots or crews. AETC FCF pilots or crews will not normally perform FCFs on transient aircraft from other services or commands without specific approval from the commander having operational control over the aircraft.

4.2.4. **(Added)** Ground control intercept or air combat maneuvering instrumentation is required to employ more than two aircraft during unlimited maneuvering.

4.2.5. **(Added)** Only two T-38 aircraft will be in a dissimilar air combat tactics visual engagement.

6.1.1. No aircraft will be accepted for flight with the low oxygen quantity light illuminated. (The OG/CC may authorize a one-time flight below 10,000 feet MSL.) If oxygen quantity decreases to 1 liter or less when airborne, descend to at or below 10,000 feet MSL and land as soon as practical.

6.2.1. Flight leads will notify air traffic control (ATC) and the operations supervisor as a minimum.

6.9. **Inflight Practice of Emergency Procedures.** The T-38C is considered a single-pilot aircraft for simulated emergency procedures training IAW AFI 11-202, Volume 3.

6.9.1. Pilots current or upgrading in the aircraft may practice simulated emergency procedures. Pilots will not practice simulated emergency takeoff, approach, or landing procedures unless an IP or flight examiner has immediate access to aircraft controls except as follows:

6.9.1.1. **(Added)** Rated pilots maintaining basic aircraft qualification status flying dual may practice simulated emergency takeoff, approach, and landing procedures without an IP or flight examiner in the aircraft.

6.9.1.2. **(Added)** Students in ENJJPT PIT are authorized to practice simulated single-engine and no-flap approaches and landings on syllabus-directed team sorties.

6.9.2. Pilots will not practice takeoff emergency procedures below 500 feet AGL.

6.9.5. **(Added)** Initiate a simulated single-engine go-around by 100 feet AGL (300 feet AGL if full flaps are used).

6.11.1.15. **(Added)** Split S or aerobatic maneuver entry, or continuing over-the-top maneuvers when the apex is below 18,000 feet AGL.

6.11.1.16. **(Added)** Lead or number three position in a four-ship formation (except the 80th Flying Training Wing).

6.13. **Nonpilot Aircrew Flying.** IFF weapon system officers may control the aircraft but will not have physical control of the aircraft during:

6.13.1. **(Added)** Student pilot sorties (in the same aircraft with the student pilot), unless safety of flight dictates.

6.13.2. **(Added)** Takeoffs or landings.

6.13.3. **(Added)** Overhead traffic patterns.

6.13.4. **(Added)** Weapons delivery (simulated).

6.13.5. **(Added)** Closer than route formation. Rejoins are authorized to a position no closer than route.

6.13.6. **(Added)** Below 2,000 feet AGL. **(Exception:** Instrument and VFR straight-in approaches may be flown until 1,000 feet AGL.)

6.14. **(Added) T-38 Minimum Equipment (when installed) (Excluding FCFs).** In AETC, T-38 minimum equipment guidance is as follows (paragraphs [6.14.1](#) through [6.14.5](#)): **(Exception:** The OG/CC exercising operational control over that aircraft may approve a one-time flight to facilitate aircraft repair.)

6.14.1. **(Added)** The following equipment must be fully operational for all sorties:

6.14.1.1. **(Added)** Tactical air navigation (TACAN) or very high frequency omnidirectional range (VOR), and distance measuring equipment (DME).

6.14.1.2. **(Added)** Landing or taxi light. (Except when detrimental to safety, pilots will display landing lights during all pattern operations.)

6.14.1.3. **(Added)** Primary and standby attitude director indicator. **Note:** Primary flight instruments must be operative in both cockpits for night or instrument

meteorological conditions (IMC) flights when aviators performing aircrew duties occupy both cockpits.

6.14.1.4. **(Added)** Anti-collision beacons.

6.14.1.5. **(Added)** Angle of attack indicator or indexer.

6.14.1.6. **(Added)** Backup controls for the ultra-high frequency (UHF), navigation (NAV), and TACAN.

6.14.1.7. **(Added)** Transponder. **(Exception:** A flight with an operable transponder is authorized for formation sorties with a minimum of one operable transponder per element in VMC.)

6.14.1.8. **(Added)** Intercom system (when both cockpits are occupied).

6.14.2. **(Added)** Position lights are required for night sorties.

6.14.3. **(Added)** Inoperable equipment in the rear cockpit is not restrictive for solo flight.

6.14.4. **(Added)** The instrument landing system (ILS) must be fully operational if a planned departure or arrival is conducted in IMC and an ILS or localizer is the only compatible instrument approach procedure.

**6.15. (Added) Introduction to Fighter Fundamentals (IFF) Student Pilot Solo Weather Restrictions.** Solo IFF student pilots (not aircraft and instrument qualified in the T-38):

6.15.1. **(Added)** May climb and descend through IMC if the ceiling is at or above 5,000 feet AGL and not more than 2,000 feet thick. The minimum inflight visibility above and below the ceiling is 5 NM.

6.15.2. **(Added)** Will not level off or cruise in any IMC conditions.

JOHN A. CHERREY, Brigadier General, USAF  
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Integration

**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

TO 1T-38C-6CF-1, *Acceptance and Functional Check Flight Procedures Manual*, 15 June 2004

***Prescribed Forms***

No forms are prescribed by this supplement

***Adopted Forms***

No additional forms are adopted by this supplement

***Abbreviations and Acronyms***

**ASDA**—accelerate-stop distance available

**CFL**—critical field length

**DAFIF**—digital aeronautical flight information file

**DD**—Declared Distance

**DS**—decision speed

**ENJJPT**—Euro-North Atlantic Treaty Organization (NATO) joint jet pilot training

**FL**—flight level

**ICAO**—International Civil Aviation Organization

**IFF**—introduction to fighter fundamentals

**ILS**—instrument landing system

**JMPS**—Joint Mission Planning System

**KCAS**—knots calibrated airspeed

**KGS**—knots groundspeed

**KIAS**—knots indicated airspeed

**LDA**—landing distance available

**MAP**—missed approach point

—Nav—navigation

**NVT**—NavData Verification Tool

**OCF**—operational check flight

**OG/CC**—operations group commander

**PIT**—pilot instructor training

**PWC**—pilot weather category

**RNAV**—area navigation

**RS—BEO**—refusal speed with both engines operating

**RS—EF**—refusal speed with engine failure

**RSU**—runway supervisory unit

**SETOS**—single engine takeoff speed

**SOF**—supervisor of flying

**SQ/CC**—squadron commander

**UPT**—undergraduate pilot training

**TDZE**—touch-down-zone elevation

**THRE**—threshold elevation

**TOLD**—takeoff and landing data

**TORA**—takeoff run available

**TOS**—takeoff speed

**Attachment 14 (Added)****UFT AND PIT TRAINING RULES**

**A14.1. Knock-It-Off (KIO) Situations.** KIO will be called when safety of flight is a factor or where doubt or confusion exists. Situations requiring a KIO include:

A14.1.1. A dangerous situation is developing.

A14.1.2. Situational awareness is lost.

A14.1.3. A violation of any of the following has occurred or appears imminent:

A14.1.3.1. Area boundaries.

A14.1.3.2. Minimum cloud separation.

A14.1.3.3. Minimum altitude.

A14.1.3.4. Minimum range.

A14.1.4. Weather is below minimums for the area or route.

A14.1.5. Any aircraft exceeds maneuvering limits such that safety of flight is compromised (i.e., over-G, min airspeed, etc.).

A14.1.6. A recognized radio failure or observation of a continuous wing rock.

A14.1.7. Bingo fuel is inadvertently overflowed.

A14.1.8. An unbriefed or unscheduled flight enters the working area and is detrimental to the safe conduct of the mission.

A14.1.9. Aircraft flying the extended trail/fluid maneuvering exercise inside the minimum range of 500 feet or forward of the 3/9 line.

A14.1.10. Lost sight. The pilot flying the aircraft that loses sight will call "Blind." The visual aircraft will assume formation deconfliction and execute the following:

A14.1.10.1. Lead Aircraft Blind. Transmit "blind" and maintain a predictable flightpath. The wingman will either call "continue" and state position or call "KNOCK-IT-OFF."

A14.1.10.2. Wingman Blind. Transmit "blind" and maneuver away from lead's last known position. Lead will call "continue" and state position or call "KNOCK-IT-OFF."

A14.1.11. Any player calls "KNOCK-IT-OFF."

**A14.2. KIO Actions.**

A14.2.1. Clear flightpath.

A14.2.2. Cease maneuvering and climb/descend to a safe altitude.

A14.2.3. Maintain visual.

A14.2.4. Acknowledge with full call sign.

**A14.3. Terminate Situations.** Terminate will be used to discontinue maneuvering when safety of flight is not a factor and called when:

A14.3.1. Bingo fuel is reached.

A14.3.2. Desired learning objectives are met.

A14.3.3. An aircraft is out of position (extended trail/fluid maneuvering cone, wing work, etc.) with no expectation of expeditious return to position.

A14.3.4. Any player calls "TERMINATE."

**A14.4. Terminate Actions.**

A14.4.1. Clear flightpath.

A14.4.2. Cease maneuvering and climb/descend to a safe altitude.

A14.4.3. Maintain visual.

A14.4.4. Acknowledge with call sign.

**A14.5. Minimum Weather.**

A14.5.1. Extended trail. Clear of clouds with 3 nm in-flight visibility and discernible horizon.

A14.5.2. Aerobatics. Clear of clouds with 3 nm in-flight visibility and discernible horizon.