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Flying Operations

SAILPLANE AIRCREW OPERATIONS

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This publication implements Air Force Instruction (AFI) 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure*, and AFMAN 11-202, Volume 3, *Flight Operations.* This publication establishes standard operational procedures for personnel operating or performing duties in Air Force-approved sailplane flying programs. This publication applies to uniformed members and civilian employees of the Regular Air Force. It also applies to Air Force Reserve and Air National Guard personnel within their respective sailplane associate instructor pilot programs. This publication does not apply to 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, as amended; departmental regulations; Title 37 United States Code Section 301a and Executive Order 9397, *Numbering System for Federal Accounts Relating to Individual Persons*, as amended. The applicable System of Records Notices (SORN) F011 AF XO A, Aviation Resource Management System (ARMS) is available at: **http://dpclo.defense.gov/Privacy/SORNs.aspx**. Ensure all records generated as a result of processes prescribed in this publication adhere to AFI 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) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 to the parent Major Command (MAJCOM) through standardization and evaluation (STAN/EVAL) channels, who will forward approved recommendations to the OPR. Per AFI 11-200, MAJCOMs will coordinate proposed MAJCOM-level supplements to this volume through 19 AF/DOV to AF/A3T prior to

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SUMMARY OF CHANGES

This publication is substantially revised and should be reviewed in its entirety. Major changes include deletion of the TG-10, addition of the TG-16 and TG-17, and modified ground handling procedures.

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Chapter 1

GENERAL GUIDANCE

1.1. Scope. This publication outlines the procedures applicable to the safe operation of sailplanes, including the TG-15, TG-16, TG-17, and any other sailplane acquired to conduct AF-approved sailplane flying programs.

1.2. Roles and Responsibilities. This publication, in conjunction with other governing directives, prescribes sailplane procedures under most circumstances, but is not to be used as a substitute for sound judgment or common sense. The pilot in command (PIC) is ultimately responsible for the safe and effective operation of the aircraft and will ensure all occupants of the aircraft comply with this directive. Accomplish specific crew duties in accordance with (IAW) this publication and technical orders (TO) 1G-15(T)-1, *Flight Manual--USAF Series TG-15A/B Aircraft,* TO 1G-16(T)-1, *Flight Manual--USAF Series TG-16A Aircraft,* or flight manuals and technical orders for any other aircraft acquired.

1.2.1. Commanders. Commanders at their respective Tier levels are responsible for complying with guidance in this publication and are responsible for providing local operating guidance to supplement the requirements of this publication IAW DAFI 33-360.

1.2.2. Pilot in Command. For all flights, units will designate a PIC on a flight authorization form, or equivalent, IAW DAFMAN 11-401, *Aviation Management,* as supplemented by MAJCOMs. **(T-1)**. PICs are:

1.2.2.1. In command of all persons aboard the aircraft and vested with the authority necessary to manage and accomplish the mission.

1.2.2.2. Responsible for the welfare of the crew and the safe accomplishment of the mission. This responsibility begins upon notification of the mission and terminates upon completion of the debrief. If the PIC determines that conditions are not safe to execute the mission, the aircraft will not depart until the condition is adequately mitigated. **(T-2)**.

1.2.2.3. The final mission authority and will make decisions not specifically assigned to higher authority. **(T-2)**.

1.2.2.4. Charged with keeping the applicable commander informed concerning mission progress and difficulties.

1.2.2.5. The final authority for asking and accepting waivers affecting the crew or mission.

1.2.2.6. Responsible for ensuring aircraft security when away from home station.

1.2.2.7. The focal point for interaction between aircrew and mission support personnel.

1.3. Deviations. Do not deviate from the procedures and guidance in this publication except when necessary to prevent an emergency or protect lives. In that case, the PIC has ultimate authority and responsibility for the course of action to be taken and will take the appropriate action to safely recover the aircraft [14 CFR Part 91.3, DAFMAN 11-401]. **(T-0).** Units will report all deviations without an approved waiver IAW AFMAN 11-202, Volume 3 (paragraph 1.9.). **(T-1)**.

1.4. Maximum Flight Duty Period Flight Time. AFMAN 11-202, Volume 3, lists maximum flight duty periods. Actual flying time for pilots (all aircraft) will not exceed 8 hours per duty day. **(T-3)**. After five hours of actual flying, flight is restricted to two qualified pilots and no instruction. **(T-3)**. (**Exception**: The above flying time restrictions do not apply to cross-country training or cross-country competition sorties. However, duty day restrictions do apply.)

Chapter 2

MISSION PLANNING

2.1. Mission Planning Duties. The individual pilots and the operations functions of the organizations jointly share responsibility of mission planning. The PIC is ultimately responsible for mission planning.

2.2. General Procedures:

2.2.1. Pilots will accomplish sufficient flight planning to ensure safe mission accomplishment. **(T-2)**. AFMAN 11-202, Volume 3, and this publication specify minimum requirements.

2.2.2. Pilots will compute weight and balance for each flight. **(T-2)**. MAJCOM-approved tabulated data may be used when available.

2.2.3. Pilots will ensure all passengers are manifested IAW AFMAN 11-202, Volume 3. **(T-2)**.

2.3. Briefings and Debriefings. The PIC is responsible for presenting a logical briefing that will promote safe, effective mission accomplishment. **(T-2)**. All pilots will attend the flight briefing and debriefing. **(T-2)**. The PIC will structure the flight briefing to accommodate the capabilities of each pilot. **(T-2)**. The PIC may brief only those items that have changed from the previous flights on subsequent flights during the same day with the same crew. The PIC will brief passengers on their specific responsibilities related to safe mission accomplishment. **(T-2)**.

2.3.1. **Briefing Guides:**

2.3.1.1. The PIC will brief and debrief all missions, using the applicable briefing guide as a reference (**Attachment 2** and **Attachment 3**). **(T-2)**. (**Note:** Briefing guides are reference lists of items that may apply to particular missions.)

2.3.1.2. Items listed may be briefed in any sequence. Those items covered by phase manuals or written squadron operations standards, and understood by all participants, may be briefed as "standard." Each guide may be expanded as necessary to cover other important items of the flight. Brief only those items applicable to the particular mission or alternate mission and in sufficient detail to prevent any misunderstanding between crewmembers.

2.3.2. **Alternate Missions:**

2.3.2.1. Pilots will brief an alternate mission profile for each flight. **(T-2)**. Solo students will not deviate from the briefed primary or alternate mission profile. **(T-2)**. **(Exception:** If the primary mission is a pattern tow, an alternate mission profile is not required.)

2.3.2.2. The alternate mission will be less complex than the primary mission. **(T-3)**. Missions or events not briefed will not be flown. **(T-3)**. Mission elements or events may be briefed airborne if it is practical to do so and flight safety is not compromised.

2.4. Maps and Charts. The PIC will ensure that when flying outside the local area, appropriate charts covering the route of flight are on board the aircraft. **(T-2)**.

2.5. Required Documents. The PIC will ensure the following documents are on board for flight:

2.5.1. Aircraft weight and balance report. **(T-2)**.

2.5.2. Airworthiness certificate. **(T-2)**.

2.5.3. Aircraft registration. **(T-2)**.

2.5.4. Air Force Technical Order (AFTO) Form 781F, *Aerospace Vehicle Flight Report and Maintenance Document*. **(T-2)**.

2.5.5. TO 1G-15(T)-1CL-1, *Flight Crew Checklist--USAF Series*, TG-15A/B, TO 1G-16(T)-1CL-1, *Pilots Abbreviated Flight Crew Checklist--USAF Series*, *TG-16A Sailplane*, or flight crew checklists for any other aircraft acquired as applicable. **(T-2)**.

2.5.6. A unit-developed pilot aid according to **paragraph 2.6.2** of this publication. **(T-2)**.

2.6. Unit-Developed Checklists and Pilot Aids:

2.6.1. Aircrew are authorized to use unit-developed checklists in lieu of flight manual checklists IAW AFI 11-215, *Flight Manuals Program.*

2.6.2. Crewmembers will still carry a current flight manual checklist (**paragraph 2.5.5**) and have it immediately available on all flights. **(T-2)**. Unit-developed pilot aids will include, as a minimum, the following items:

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

2.6.2.2. Local radio frequencies. **(T-2)**.

2.6.2.3. Appropriate airfield diagrams, including aircraft arresting systems. **(T-2)**.

2.6.2.4. Emergency information, including impoundment procedures, emergency action checklists, lost communications procedures, and diversion information. **(T-2)**.

2.6.2.5. Cross-country procedures, including command and control, aircraft security, and aircraft servicing. **(T-2)**.

2.6.2.6. Local training areas. **(T-2)**.

2.6.2.7. Stereo flight plans. **(T-2)**.

2.6.2.8. Other information deemed necessary by the local unit. **(T-2)**.

2.6.3. Units will forward unit-developed checklists and local pilot aids / inflight guides (IFG) to MAJCOM Stan/Eval for review prior to release. **(T-2)**.

Chapter 3

NORMAL OPERATING PROCEDURES

3.1. Preflight:

3.1.1. **Required Equipment.Chapter 4** specifies the minimum equipment required for flight.

3.1.2. **Aircraft Systems.** Students will not fly solo in aircraft requiring an operational check. **(T-2)**. With operations supervisor approval, pilots may perform operational checks during dual-student training sorties if the checks do not interfere with training objectives.

3.1.3. **Ballast Operations:**

3.1.3.1. Pilots will only load ballast according to the aircraft flight manual. **(T-2)**.

3.1.3.2. Pilots will not use parachutes for ballast unless the personnel with the parachute have been trained according to AFI 11-301, Volume 1, *Aircrew Flight Equipment (AFE) Program*. **(T-2)**.

3.1.3.3. Pilots will use ballast as required to ensure proper aircraft weight and balance. **(T-2)**. An instructor pilot (IP) signing off a solo must check the weight and balance charts to confirm weight requirements. **(T-2)**.

3.1.3.3.1. PICs will return ballast to the proper storage location or ensure positive handoff to the next crew to take the aircraft. **(T-2)**. PICs will ensure that proper annotation in the AFTO 781, *ARMS Aircrew/Mission Flight Data Document,* is made when installing and uninstalling ballast. **(T-2)**.

3.1.3.3.2. If the tail battery is removed to bring weight and center of gravity (CG) within limits for flight, it must be annotated in the AFTO 781, and will be reinstalled immediately after the flight unless the subsequent crew weight and balance requires removal of the tail battery as well. **(T-2)**. PICs will ensure weight and CG is correctly calculated. **(T-2)**.

3.1.4. **Foreign Object Damage (FOD).** To reduce the risk of FOD and personal injury, personnel will ensure loose items are secured in the cockpit at all times. **(T-2)**.

3.1.5. **Assembly and Disassembly:**

3.1.5.1. Assembly and disassembly of aircraft will only be performed by trained crewmembers. **(T-2)**.

3.1.5.2. After a sailplane is reassembled, an assembly/disassembly certified pilot involved in the aircraft assembly will sign off the "Corrected by" block in the AFTO Form 781A, *Maintenance Discrepancy and Work Document*. **(T-2)**. Qualified maintenance personnel must then inspect the sailplane prior to flight. **(T-2)**. (**Exception:** When maintenance personnel are not available, an assembly/disassembly certified rated officer or civilian may inspect the aircraft.) The individual who performed the inspection will sign off the red X and the "Inspected by" block in the AFTO Form 781A. **(T-2)**.

3.1.6. **Preflight Inspections:**

3.1.6.1. The PIC is responsible for ensuring the AFTO 781-series forms are reviewed prior to flight. **(T-2)**. Interior and exterior inspections will be accomplished by the aircrew that will fly the aircraft prior to every flight. **(T-2)**.

3.1.6.2. Pilots or maintenance personnel discovering a non-airworthy condition will immediately install a red tag on the aircraft control stick and ensure the aircraft AFTO Form 781H, *Aerospace Vehicle Flight Status and Maintenance,* is updated to reflect a red X status. **(T-2)**. Units will make red tags available in the AFTO 781-series forms. **(T-2)**. Only authorized maintenance personnel will remove the tag when repairs are complete and the aircraft is released for flight. **(T-2)**.

3.2. Ground Operations:

3.2.1. **Ground Handling:**

3.2.1.1. Ground handlers will maintain 10 feet of separation between sailplanes. **(T-2)**. (**EXCEPTION:** Less than 10 feet of separation between sailplanes is authorized when sailplanes are staged for a cross-country launch grid. If sailplanes are staged for a cross-country launch grid, ground handlers will remove the tail wheel dollies.)

3.2.1.2. Ground handlers will verify that unless a sailplane is in the takeoff position, airbrakes are open or unlocked and the upwind wing is manned. **(T-2)**.

3.2.1.3. Do not stand in front of any part of a sailplane hooked up for launch. **(T-2)**.

3.2.1.4. Do not ground handle or move aircraft so as to overlap wings and/or fuselages unless hangaring the aircraft (**paragraph 3.2.3**). **(T-2)**.

3.2.1.5. Personnel will ensure draglines used for towing are at least as long as one half the wingspan of the sailplane. **(T-2)**.

3.2.1.6. A minimum of two personnel are required to ground handle sail planes, with three or more desired. **(T-3)**. Position one person at the aircraft nose, and one person on the upwind wing tip or critical side. **(T-3)**. When three personnel are available, position the third person opposite wing root, wing tip, or at the aircraft tail. **(T-3)**.

3.2.1.7. Close and secure the canopy when the cockpit is not occupied, unless the canopy is being guarded. **(T-2)**.

3.2.1.8. Never leave a sailplane unattended unless it is secured. **(T-2)**.

3.2.1.9. Tie down sailplanes IAW local directives and the flight manual (or commercial operator's manuals if flight manuals unavailable), normally facing into the wind. When tying down any sailplane overnight, ground handlers will attach both wings and the tail to established tiedown equipment. **(T-2)**. For the TG-15, use wing cuffs and a main wheel strap (if a main wheel ground tiedown is available). To prevent damage to the TG-15 fuselage, use a tail dolly or additional padding to secure the tail. **(T-2)**.

3.2.2. **High Wind Procedures.** Units will ensure there are adequate personnel on the flight line to safely ground handle all sailplanes during high winds (over 25 knots). **(T-2)**. Ground handlers will increase nose-to-tail separation (minimum one half the wingspan) of aircraft on the flight line during high wind conditions. **(T-2)**. If practical, turn the aircraft into the wind, place a crewmember in the cockpit, and ensure the airbrakes are open to prevent aircraft damage.

3.2.2.1. When winds exceed 25 knots, a minimum of three personnel are required to move each sailplane. **(T-2)**. A minimum of two personnel are required while the aircraft is static. **(T-2)**.

3.2.2.2. When winds exceed 30 knots, all sailplanes will remain tied down or be hangared. **(T-2)**. Units will use good judgment and use as many personnel as possible (a minimum of four) to move sailplanes. **(T-2)**. After landing, aircrews should remain in the cockpits with the radio on, the airbrakes open, and the stick aft until assistance arrives. If available, ground handlers may place weights in front cockpits, holding the stick aft while towing the sailplane behind a vehicle.

3.2.2.3. When temporarily tying down sailplanes due to inclement weather, as a minimum, ground handlers will:

3.2.2.3.1. Attach tie-down rings to established tie down equipment (TG-16). **(T-2)**.

3.2.2.3.2. Remove the wingtips, route the tie down rope through the wingtip pin, and reconnect the wingtip to the sailplane (TG-15). **(T-2)**.

3.2.3. **Hangaring:**

3.2.3.1. Units will use a minimum of two personnel to hangar sailplanes. **(T-2)**. At least one of the personnel must be certified to hangar sailplanes. **(T-2)**.

3.2.3.2. Ground handlers will install main wheel dollies by pushing the sailplane onto the dolly with the wings level and installing the stop bar being careful not to damage the main wheel faring (TG-16) or landing gear doors (TG-15). **(T-2)**. For the vehicle-style dollies, loosen the jack, install the dolly around the main wheel, and raise the main wheel up until it is no longer making contact with the ground. **(T-2)**.

3.2.3.3. After hangaring, airbrakes will remain unlocked and canopies will be closed and locked (covered as necessary). **(T-2)**.

3.2.3.4. Units may publish local sailplane hangaring procedures.

3.2.4. **Additional Flight Line Duties.** Units will define additional flight line duties to support sailplane operations. **(T-2)**.

3.3. Takeoff and Landing:

3.3.1. **Minimum Runway:**

3.3.1.1. The minimum landing surface is determined by the spacing requirements in **paragraph 3.3.4**

3.3.1.2. Units will publish procedures to limit operations when takeoff runways or landing surfaces are other than dry, or when a hard surface landing is required. **(T-2)**.

3.3.1.3. Units will publish approval procedures for flights to or from other than established landing surfaces. **(T-2)**.

3.3.2. **Minimum Aerotow Rate of Climb.** Units will publish procedures to limit operations when density altitude exceeds 10,000 feet. **(T-2)**. All tow operations will cease when a minimum altitude of 200 feet above ground level (AGL) cannot be achieved by 1 nautical mile (NM) from the departure end of the runway. **(T-0)**.

3.3.3. **Wind Limitations:**

3.3.3.1. Maximum wind for takeoff for all sailplanes is 25 knots. **(T-2)**. Gust factor limit for all sailplanes is 10 knots. **(T-3).** Exercise extreme caution when tailwind component exceeds 5 knots. Pilots will use the full gust factor and maximum crosswind angle of variable winds to determine if winds exceed aircraft or pilot limits for takeoff. **(T-2)**. If the crosswind component (including gusts) exceeds flight manual limits, pilots will consider changing the landing direction and land into the wind, if possible. **(T-2)**.

3.3.3.2. The maximum crosswind limits for takeoff and landing are defined in the mission design series (MDS) specific flight manuals.

3.3.3.3. The maximum crosswind limit for an initial solo's takeoff and landing is 10 knots. **(T-2)**.

3.3.4. **Minimum Spacing:**

3.3.4.1. Pilots will comply with the sailplane reduced same runway minimums defined in MAJCOM guidance to include supplements to AFMAN 13-204, Volume 3, *Air Traffic Control*. **(T-2)**.

3.3.4.2. Pilots will land the aircraft so as to maintain at least 50 feet of lateral separation from sailplanes or obstacles during landing and rollout. **(T-2)**.

3.3.4.3. Pilots will stop the aircraft no less than 200 feet behind other aircraft, obstacle, or personnel. **(T-2)**. (**Note:** A tow rope is not considered an obstacle, but pilots will avoid rolling over the assembly hardware. **(T-2)**.)

3.3.4.4. For landings on the same runway behind other than sailplanes or tow airplanes (aerotow), pilots will not plan to cross the runway threshold until preceding aircraft are clear of the runway. **(T-2)**.

3.3.5. **Sailplane Launch:**

3.3.5.1. The only authorized method of sailplane launch is by a tow rope attached to a tow airplane (aerotow). **(T-2)**. Do not stand in front of any part of a sailplane hooked up for launch. **(T-2)**. Personnel and equipment not involved with the launch of the sailplane in departure position must remain behind the rear of the aircraft or be 50 feet clear to the side of the aircraft. **(T-2)**.

3.3.5.2. Units will determine the minimum tow rope length. **(T-3)**. Prior to tow rope hookup, the pilot will inspect the rope condition and replace if necessary. **(T-2)**.

3.3.5.3. Unless local requirements are different, pilots will use visual signals to:

3.3.5.3.1. Indicate to the tow to take the slack out of the tow rope by leveling the wings. **(T-2)**.

3.3.5.3.2. Indicate to the tow when ready for takeoff by wagging the rudder. **(T-2)**. The tow should respond with a rudder wag and commence the takeoff.

3.3.5.4. Units will define general launch procedures in a local supplement to this publication. **(T-2)**.

3.4. Traffic Patterns:

3.4.1. The maximum traffic pattern bank angle is 45 degrees. **(T-2)**.

3.4.2. The minimum safety altitude for a gate finish is 500 feet AGL for a 1 NM radius gate or 800 feet AGL for a 2 NM radius gate. **(T-2)**.

3.4.3. Pilots will fly traffic patterns to roll out on final above 200 feet AGL minimum. **(T-2)**.

3.5. Aerobatic Procedures. Pilots will only perform aerobatics in approved airspace IAW AFMAN 11-202, Volume 3. **(T-2)**.

3.6. Minimum Altitudes:

3.6.1. Pilots will initiate spins above 3,500 feet AGL and recover from spins no lower than 3,000 feet AGL. **(T-3)**. (**Exception:** Initiate competition spins so as to recover above 2,000 feet AGL. **(T-3)**.)

3.6.2. Pilots will recover from spin prevents above 2,000 feet AGL. **(T-3)**.

3.6.3. Pilots will initiate snap rolls, tail slides, and hammerheads above 2,000 feet AGL. **(T-3)**.

3.6.4. Pilots will complete spiral dive, nose-high stall, turning stall, and landing attitude stall recoveries above 1,500 feet AGL. **(T-3)**.

3.6.5. Pilots will complete all aerobatics to maintain final glide distance or 1200 AGL, whichever is higher. **(T-3)**.

3.6.6. Pilots will complete slow flight above 1,000 feet AGL provided the stall indication airspeed was determined above 1,500 feet AGL. **(T-3)**.

3.6.7. Pilots will not use thermalling below 500 feet AGL or once established in a traffic pattern. **(T-3)**.

3.6.8. Pilots will not perform intentional slack lines or box-the-wash below 1,000 feet AGL. **(T-3)**.

3.6.9. Pilots will remain above 500 feet AGL during ridge soaring or flight over mountain ranges. **(T-3)**.

3.6.10. Pilots will complete all slips above 100 feet AGL. **(T-3)**.

3.7. Clothing Requirements. All aircrew members will wear flight suits and flight boots, or other MAJCOM or installation-approved uniforms while operating the aircraft. **(T-2)**. Passengers may wear any uniform combination or appropriate civilian attire.

3.7.1. Aircrew members will have appropriate seasonal flight clothing readily available for flight. **(T-2)**.

3.7.2. Aircrew members will comply with FOD hazard restrictions IAW AFMAN 11-202 Volume 3 before performing aircrew duties. **(T-2)**.

3.7.3. Parachutes must be worn for all spin, aerobatic, cross-country, and wave flights. **(T-2)**. All crewmembers must be trained in parachute operations IAW AFI 11-301, Volume 1. **(T-2)**.

3.7.4. All occupants will wear seatbelt and shoulder harnesses at all times while operating the aircraft. **(T-2)**.

3.8. Weather Requirements:

3.8.1. If lightning or thunderstorms are reported within 10 NM of the area of operation, units will ensure the aircraft is not exposed to hail, lightning, wind shear, or microbursts. **(T-2)**. Units will terminate operations with lightning within 5 NM. **(T-2)**.

3.8.2. Units will publish procedures to limit operations when wind chill or outside air temperatures (low or high) could affect safety. **(T-2)**.

3.8.3. All sailplane operations will remain in visual meteorological conditions (VMC) as defined in AFMAN 11-202, Volume 3. **(T-2)**.

3.8.4. Flight into areas of known or forecast icing conditions is prohibited. **(T-2)**.

3.8.5. Units will adhere to AFMAN 11-202, Volume 3 guidance regarding turbulence. **(T-2)**. If severe turbulence is reported, cease operations in the affected area. **(T-2)**.

3.8.6. Pilots will report severe sink conditions (greater than 10 knots at normal glide speeds) to unit supervisors or air traffic control (ATC). **(T-2)**.

3.9. Instructor Pilot (IP)-required Maneuvers. Pilots will not accomplish the following maneuvers unless an instructor pilot is at a set of controls:

3.9.1. Intentional slack line. **(T-2)**. (**Note:** Intentional inside slack line demonstrations require a certified pilot instructor training (PIT) IP. **(T-2)**.)

3.9.2. Spin. **(T-2)**. (**Note:** Spins require a certified spin IP unless the pilot is certified under an approved aerobatic training program. **(T-2)**.)

3.9.3. Intentional low pattern. **(T-2)**.

3.9.4. Simulated rope break. **(T-2)**.

3.10. Navigation Procedures:

3.10.1. Pilots will maintain final glide for a normal pattern to a previously surveyed landing area at all times. **(T-2)**. Consider landing areas identified in the World Wide Soaring Turn Point Exchange Database (**http://soaringweb.org/TP**) surveyed.

3.10.2. During cross-country flight, pilots will contact the ground crew or unit supervisor every 30 minutes or when deviating from the planned route of flight. **(T-2)**. (**Exception:** Contact with the ground crew is not required when limited by competition rules.)

3.10.3. Pilots may use the global positioning system (GPS) and moving map displays in MAJCOM approved electronic flight bags (EFB) or any other authorized mission enhancement systems IAW AFMAN 11-202, Volume 3. They will not be used as the primary means of navigation. **(T-2)**. Units will maintain configuration control of the installed software. **(T-2)**. The parent MAJCOM will approve all software version updates and any airspace database sources before in-flight use.

3.11. Night Procedures. Sailplanes will not fly prior to official sunrise and must be in the traffic pattern no later than 5 minutes prior to official sunset. **(T-2)**. Sailplanes must land no later than official sunset. **(T-2)**.

3.12. Thermalling Procedures. When entering a thermal:

3.12.1. Turn in the direction of other aircraft already established in the thermal. **(T-3)**. (**Note:** Turn direction may be mandated by competition rules.)

3.12.1.1. The first pilot to enter a thermal establishes the turn direction unless otherwise mandated by competition rules. **(T-3)**.

3.12.1.2. Aircraft joining other gliders in a thermal may join from the top, middle, or bottom by turning in the direction of other aircraft already established in the thermal.

3.12.1.3. Do not interfere with or obstruct other sailplanes already established in the thermal. Pilots climbing quicker must not hinder others. **(T-3)**.

3.12.1.4. If entering colatitude with another glider, sailplanes should enter from the opposite side of the thermal.

3.12.2. Sailplanes participating in a simulated or sanctioned Soaring Society of America (SSA) competition will thermal IAW official SSA competition rules, located at **http://ssa.org**. **(T-2)**.

3.12.3. Units will establish local thermalling procedures. **(T-2)**.

3.13. Passenger Procedures:

3.13.1. The PIC will brief passengers according to the mission briefing guide at **Attachment 2** and the passenger briefing guide at **Attachment 3**. **(T-2)**.

3.13.2. Passengers will normally occupy the front seat unless center of gravity calculations require the passenger to occupy the rear seat.

3.13.3. DAFMAN 11-401 lists passenger approval authorities and restrictions.

3.13.4. Passengers will not control the aircraft during critical phases of flight (takeoff, landing, and traffic patterns) or below 1,000 feet AGL. **(T-2)**.

3.14. Simulated Emergency Procedures:

3.14.1. The IP will brief all airborne simulated emergencies before flight. **(T-2)**.

3.14.2. Pilots will not practice compound or multiple simulated emergencies in flight, or initiate simulated emergencies below 300 feet AGL. **(T-3)**.

3.15. Nontowered Airfield (NTA) Operations:

3.15.1. With the operations group commander's (OG/CC) approval, aircrews may conduct operations at nontowered, public-use airfields as follows:

3.15.1.1. All common traffic advisory frequency and flight service station (FSS) calls will be in accordance with the *Aeronautical Information Manual* (AIM). **(T-0)**.

3.15.1.2. Pilots will fly rectangular patterns (as depicted in AIM), and emergency procedures patterns. **(T-2). Exception:** Pilots may fly overhead and demonstration patterns during sanctioned competition and training when approved by the airfield manager or when a letter of agreement (LOA) is established by the OG/CC.

3.15.1.3. Aircrews will immediately notify the operations supervisor if any hazardous conditions exist at an NTA that would prevent normal operations. **(T-2)**.

3.15.2. Each OG commander will require and approve a training program to prepare aircrews to operate in the NTA environment. **(T-2).** As a minimum, the program will include a discussion of all applicable codes of federal regulations, advisory circulars, and AIM references on NTA operations. **(T-2)**. Training will emphasize standard civilian radio phraseology. **(T-2)**.

3.16. Functional Check Flights (FCF):

3.16.1. Do not conduct an FCF with other type missions except FCF continuation training (CT) or FCF upgrade training flights. **(T-2).** All FCF requirements will be accomplished by an FCF pilot or a pilot in training status with an FCF IP on board. **(T-2).**

3.16.2. IAW AFI 21-101, *Aircraft and Equipment Maintenance Management,* the mandatory flight requirements for FCFs are outlined in TO 1-1-300, *Maintenance Operational Checks and Check Flights*, and the applicable -6 TO. FCF profiles are determined by the maintenance requirement causing the FCF. The decision to fly a full profile FCF is the decision of the maintenance group commander (MXG/CC).

3.16.3. Maneuvers not IAW TO 1G-16(T)-6CF-1, *Acceptance and/or Functional Check Flight Procedures Manual, USAF Series TG-16A Aircraft,* TO 1G-15(T)-6CF-1, *Acceptance and/or Functional Check Flight Procedures Manual, USAF Series TG-15A/B Aircraft,* or flight procedures manuals for any other aircraft acquired, will not be flown or practiced on FCF missions. **(T-2).**

3.17. Transfer of Aircraft Control. Pilots must know who has control of the aircraft at all times **(T-2).**

3.17.1. The pilot assuming control of the aircraft will state, *"I have the aircraft*," and will shake the stick. **(T-2).** (**Exception:** During high-speed dive recoveries, high-speed aerobatic maneuvers, intentional developed spin recoveries, or critical phases of flight, the pilot assuming control will state, "*I have the aircraft*," but will not shake the stick. **(T-2)**.)

3.17.2. The pilot relinquishing control will state, "*You have the aircraft"*. **(T-2)**. Once assuming control of the aircraft, maintain control until relinquishing it as stated above. **(T-2)**.

3.18. G-Awareness Exercise. The intent of the G-awareness exercise is to prepare the pilot for precise high-G maneuvering and evaluate G-meter readings between cockpits (if applicable).

3.18.1. Pilots will accomplish a G-awareness exercise on every sortie where they plan or are likely to maneuver above four Gs. **(T-2)**. (**Exception:** A G-awareness exercise is optional on subsequent sorties with the same crew on the same day.)

3.18.2. A G-awareness exercise will consist of a smooth pull to at least four Gs. **(T-2)**.

3.18.3. On dual sorties, pilots will crosscheck G-meter indications between cockpits. **(T-2)**. If a discrepancy exists between the front and rear cockpit G meters of .04 Gs or greater, pilots will continue the sortie using the most conservative (highest indicated G) display. **(T-2)**. Pilots will notify maintenance of the discrepancy upon landing and write it up in the AFTO 781-series forms. **(T-2).**

3.19. Oxygen Requirements. The PIC will ensure oxygen is used IAW AFMAN 11-202, Volume 3, and the applicable aircraft flight manual. **(T-1)**. Units will ensure only certified personnel service oxygen equipment. **(T-2)**. When oxygen is required, enough oxygen must be onboard to complete the mission and land with the gauge reading above the red zone. **(T-2)**. Pilots on oxygen will perform a pressure, regulator, indicator, connections, and emergency (PRICE) check every 30 minutes. **(T-2)**.

3.20. Post Flight. After flight, aircrews will:

3.20.1. Perform the appropriate *After Landing Check* unless another crew immediately takes control of the aircraft. **(T-2)**.

3.20.2. Complete the AFTO 781-series forms and notify maintenance of discrepancies. **(T-2)**.

3.20.3. Never leave an aircraft unattended unless it is secured or hangared. **(T-2)**.

Chapter 4

OPERATING RESTRICTIONS

4.1. Sailplane Equipment Exceptions. All installed systems and equipment must be functional unless **Table 4.1** lists an exception. **(T-2)**. The PIC will ensure any item considered essential to mission completion is fixed or corrected prior to flight. **(T-2)**. Pilots may consult squadron supervisors for additional guidance, if necessary. (**Note:** TG-17 (and other future acquisition sailplanes) equipment exceptions will be added to **Table 4.1** when respective flight manuals are published.)

4.2. Waivers. OG/CCs may waive the requirements of this chapter for an operational necessity.

Table 4.1. Sailplane Equipment Exceptions.

ITEM	A Equipment	B Limitations/Requirements/Exceptions
All Sailplanes		
1	G meter	May be inoperative for unoccupied seat.
2	Microphone	May be inoperative for unoccupied seat.
3	Push-to-talk switch	May be inoperative for unoccupied seat.
4	Canopy windows and vents	Panel air vents may be inoperative. Canopy sliding windows must function.
5	Seatbelt, shoulder harness, and release mechanism	May be inoperative for unoccupied seat.
TG-15A/TG-15B		
6	ILEC SN-10B (Note 1)	Required for occupied seats on cross country sorties. For local sorties, may be inoperative on both instrument panels provided the Volkslogger is functional.
7	Variometer (ILEC RAZ) (TG-15A only)	One variometer on the rear instrument panel may be inoperative.
8	Oxygen System	May be inoperative provided aircrew comply with AFMAN 11-202 Vol 3 unpressurized operations without supplemental oxygen.
9	Water Ballast System	May be inoperative provided aircrew verify the system is empty prior to flight.
10	Transponder	May be inoperative provided aircrew comply with AFMAN 11-202 Vol 3 airspace equipment requirements.
11	FLARM (Note 1)	Required for cross country sorties.
12	Volkslogger	Required for every sortie.

TG-16A		
13	Pneumatic Variometer	May be inoperative provided the Cambridge 302 DDV on the same instrument panel is functional.
14	Cambridge 302 DDV (Note 1)	Required for occupied seats on cross country sorties. For local sorties, may be inoperative provided the pneumatic variometer on the same instrument panel is functional.
15	Cambridge 303 Navigational Display Unit (Note 1)	Required for occupied seats on cross country sorties. For local sorties, may be inoperative on the rear instrument panel.
Note 1: Cross country is defined as outside final glide of the departure airfield.		

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Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

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

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

AFI 11-215, *Flight Manuals Program,* 25 March 2019

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

DAFMAN 11-401, *Aviation Management,* 27 October 2020

AFMAN 13-204, Volume 3, *Air Traffic Control*, 22 July 2020

AFI 21-101, *Aircraft and Equipment Maintenance Management,* 16 January 2020

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

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

T.O. 1-1-300, *Maintenance Operational Checks and Check Flights*, 15 March 2012

TO 1G-15(T)-1, *Flight Manual--USAF Series TG-15A/B Aircraft,* 30 June 2016

TO 1G-15(T)-1CL-1, *Flight Crew Checklist--USAF Series,* 30 June 2016

TO 1G-15(T)-6CF-1, *Acceptance and/or Functional Check Flight Procedures Manual, USAF Series TG-15A/B Aircraft*, 1 October 2007

TO 1G-16(T)-1, *Flight Manual--USAF Series TG-16A Aircraft*, 1 January 2012

TO 1G-16(T)-1CL-1, *Pilots' Abbreviated Flight Crew Checklist*, *USAF Series TG-16A Sailplane*, 1 January 2018

TO 1G-16(T)-6CF-1, *Acceptance and/or Functional Check Flight Procedures Manual*, *USAF Series TG-16A Aircraft*, 1 January 2012

Aeronautical Information Manual (AIM), 30 January 2020

Title 14, Code of Federal Regulations, Part 91, *General Operating and Flight Rules*

Executive Order 9397, *Numbering System for Federal Accounts Relating to Individual Persons*, 22 November 1943

Title 37 United States Code, Section 301a, *Incentive Pay*, 1 June 1974

Public Law 93-579, *The Privacy Act of 1974*, 31 December 1974

Prescribed Forms

None

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

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

AFTO Form 781A, *Maintenance Discrepancy and Work Document*

AFTO Form 781F, *Aerospace Vehicle Identification Document*

AFTO Form 781H, *Aerospace Vehicle Flight Status and Maintenance*

DD Form 2992, *Medical Recommendation for Flying or Special Operational Duty*

Abbreviations and Acronyms

ACRO—acrobatics

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFTO—Air Force Technical Order

AGL—above ground level

AIM—Aeronautical Information Manual

ATC—air traffic control

CG—center of gravity

CRM—cockpit/crew resource management

CT—continuation training

DNIF—duty not including flying

EFB—electronic flight bag

FCIF—flight crew information file

FCF—functional check flight

FOD—foreign object damage

FSS—flight service station

GPS—global positioning system

IAW—in accordance with

IFG—inflight guide

IP—instructor pilot

LOA—letter of agreement

MAJCOM—Major Command

MDS—mission design series

MXG/CC—Maintenance Group Commander

NM—nautical mile

NOTAM—notice to airmen

NTA—nontowered airfield

OG/CC—Operations Group Commander

OPR—office of primary responsibility

PIC—Pilot in Command

PIT—pilot instructor training

PRICE—pressure, regulator, indicator, connections, and emergency

RM—risk management

SII—Special Interest Items

STAN/EVAL—Standardization and Evaluation

TO—Technical Order

VMC—visual meteorological conditions

WX—weather

XC—cross country

Terms

Aeronautical Information Manual—the Federal Aviation Administration's official guide to basic flight information and ATC procedures available online at **https://www.faa.gov/ATpubs/AIM/index.htm**.

Critical phases of flight—periods of time during takeoff, landings, and all emergency procedures.

Cross-country—flights outside of final glide distance from the departure or destination airfield.

Day—the period of time between the beginning of morning civil twilight and the end of evening civil twilight as defined in the Air Almanac. All sailplane flights must be performed within this period. **(T-2)**.

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

Final glide distance—the distance across the ground a sailplane is capable of gliding under the current conditions (airspeed, altitude, weight, wind, lift, sink, and bugs) not including water ballast. Final glide distance includes the distance used for any maneuvering required prior to landing.

Home station—an airfield where the aircrew usually operates from for day-to-day missions and aircraft maintenance is available. This includes deployed locations during a deployment.

Night—the time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the Air Almanac, converted to local time.

Attachment 2

MISSION BRIEFING GUIDE

A2.1. Mission Data:

A2.1.1. Go/no-go (currencies, DNIF, current DD Form 2992, *Medical Recommendation for Flying or Special Operational Duty*, FCIF, and read files).

A2.1.2. Flight authorization and approval.

A2.1.3. Flight Restrictions (crew rest, alcohol consumption, altitude chamber, blood donation, etc.).

A2.1.4. WX/NOTAMs/Ops Notes/SIIs briefed.

A2.1.5. Required publications for flight.

A2.1.6. Review student grade sheet.

A2.1.7. Mission objectives.

A2.1.8. Training objectives

A2.1.9. Mission (AM-251, CT, Upgrade, Acro, XC, etc.).

A2.1.10. Alternate mission.

A2.1.11. Special syllabus requirements.

A2.1.12. Personal considerations/equipment (cold wx gear, airsick bag, electronic devices, glasses, remove rings, etc.).

A2.1.13. RM considerations and calculation/approval.

A2.1.14. CRM topic.

A2.1.15. Call sign/Pilot in Command.

A2.1.16. Solo operations (secure rear seat, remove FOD, fasten straps and close rear canopy vent).

A2.1.17. Weight and balance.

A2.2. Ground Operations:

A2.2.1. Ground handling, hangaring and trailering/assembly/disassembly.

A2.2.2. Pre-flight and post-flight inspections.

A2.2.3. AFTO 781 review.

A2.3. Takeoff, Aerotow, and Departure:

A2.3.1. Tow hookup.

A2.3.2. Crew positions and responsibilities.

A2.3.3. Takeoff and abort procedures.

A2.3.4. Departure direction and destination.

A2.3.5. Release procedures and altitude.

A2.4. Area Work:

A2.4.1. Maneuvers to accomplish/route.

A2.4.2. Minimum maneuver and recovery altitudes.

A2.4.3. G-awareness exercise.

A2.5. Arrival:

A2.5.1. Traffic entry.

A2.5.2. Pattern and landing.

A2.6. Crew/Cockpit Resource Management:

A2.6.1. Clearing (areas of possible conflict).

A2.6.2. Communications (checklists, radio procedures).

A2.6.3. Transfer of aircraft control (with/without intercom).

A2.6.4. Inflight checks.

A2.7. Emergency Procedures:

A2.7.1. Crew responsibilities.

A2.7.2. Ground egress.

A2.7.3. Rope breaks/unintentional release.

A2.7.4. Forced landing procedures.

A2.7.5. Bailout procedures.

A2.7.6. Physiological incidents (eyes, ears, sinus, air sickness).

A2.8. Passenger Briefing, if required (Attachment 3).

A2.9. Questions.

Attachment 3

PASSENGER BRIEFING GUIDE

A3.1. Mission Approval:

A3.1.1. Mission authorization. (DAFMAN 11-401 approval and prerequisites complete)

A3.1.2. Supervisor briefing (if required).

A3.1.3. Medical clearance.

A3.2. Additional Personal Considerations:

A3.2.1. Medical status, nutrition and hydration.

A3.2.2. Personal belongings (cell phones off, glasses, rings, scarves, gloves, coat).

A3.2.3. Flight duration.

A3.3. Additional Ground Operations:

A3.3.1. Ingress, strap-in and egress.

A3.3.2. Controls and instruments.

A3.3.3. Release knob location.

A3.3.4. Canopy and window operation.

A3.3.5. Radio operation and volume control.

A3.4. Flight Operations:

A3.4.1. Flight characteristics.

A3.4.2. Passenger risk management.

A3.4.3. Emergency procedures (abort, rope break, spin recovery, bailout).

A3.4.4. Planned maneuvers.

A3.5. Mission Restrictions.

A3.5.1. Military passenger.

A3.5.2. Civilian passenger.

A3.6. Additional Information (as required)

A3.7. Passenger Questions