BY ORDER OF THE SECRETARY OF THE AIR FORCE

AIR FORCE MANUAL 11-2UV-18, VOLUME 3

20 NOVEMBER 2020

Flying Operations

UV-18 OPERATIONS PROCEDURES

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: Publications and forms are available on the e-Publishing website at **www.e-publishing.af.mil** for downloading or ordering.

RELEASABILITY: There are no releasability restrictions on this publication.

OPR: 19 AF/DOV

Certified by: AF/A3T
(Maj Gen James A. Jacobson)

Supersedes: AFI11-2UV18V3, 19 March 2015

Pages: 36

This manual implements Department of the Air Force Policy Directive (DAFPD) 11-2, *Aircrew Operations*, and is consistent with Air Force Instruction (AFI) 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure*, and Air Force Manual (AFMAN) 11-202V3, *Flight Operations*. It prescribes standard procedures to be used by all pilots operating Air Force UV-18 aircraft. With the exception of personnel in associate programs, this manual does not apply to Air Force Reserve Command or Air National Guard units unless specified by major command (MAJCOM) memorandum of understanding. This manual requires the collection and or maintenance of information protected by the Privacy Act of 1974 authorized by Title 5 United States Code Section 552a and Executive Order 9397, *Numbering System for Federal Accounts Relating to Individual Persons*. The applicable System of Records Notice (SORN), F011 AF XO A, *Aviation Resource Management System (ARMS)*, is available at: **https://dpcld.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 AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 to the parent MAJCOM through standardization and evaluation channels, who will forward approved recommendations to the publication OPR. This publication may be supplemented at any level. Field units below MAJCOM level will coordinate copies of their supplements with their parent MAJCOM OPR before publication. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See Department of the Air Force Instruction

(DAFI) 33-360, *Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the requestor's commander for non-tiered compliance items. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Department of the Air Force.

SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Major changes include compliance with the Secretary of the Air Force publication guidance to reduce regulatory information and to convert this manual from the former instruction.

Chapter 1

GENERAL INFORMATION

1.1. Scope. This publication outlines the procedures applicable to the safe operation of the UV-18. Along with the complementary references cited, this manual prescribes standard operational procedures to be used by all pilots operating UV-18 aircraft.

1.2. Roles and Responsibilities. This publication, in conjunction with other governing directives, prescribes UV-18 procedures under most circumstances, but is not to be used as a substitute for sound judgment or common sense.

1.2.1. Commanders. Commanders at their respective Tier levels are responsible for complying with guidance in this AFMAN and are responsible for providing local operating guidance to supplement the requirements of this manual.

1.2.2. Pilot in Command (PIC). The PIC is ultimately responsible for the safe and effective operation of the aircraft. Guidance on designating a PIC on a flight authorization form, or equivalent, for all flights is provided in DAFMAN 11-401, *Aviation Management.* PICs are:

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

1.2.2.2. Responsible for the welfare of the crew and the safe accomplishment of the mission. This begins upon notification of the mission and terminates upon completion of the debrief. If the PIC determines that conditions are not safe to prosecute the mission, the PIC will not allow 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.

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 aircrews and mission support personnel.

1.3. Deviations. Do not deviate from the procedures and guidance in this publication except when necessary to preserve safety 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.

1.4. References. The primary references for UV-18 operations are this manual and Technical Order (TO) 1U-18(V)B-1, *Flight Manual, USAF Series, UV-18 Aircraft.* Training units may develop phase manuals from the procedures contained in these documents. Phase manuals may be used to augment initial and mission qualification training. They may expand these basic procedures but cannot be less restrictive in accordance with DAFI 33-360. Aircrews will only fly maneuvers described in these references. **(T-2).**

1.5. Crew Requirements.

1.5.1. The normal crew for the UV-18 aircraft is two qualified pilots, one of which must be aircraft commander certified in accordance with AFMAN 11-2UV-18V1, *UV-18 Aircrew Training*. **(T-2)**. **Exception:** The squadron commander may authorize instructor pilots (IPs) to conduct single-pilot operations.

1.5.2. Parachuting operations require a qualified jumpmaster (JM) in accordance with AFI 11-410, *Personnel Parachute Operations*, and MAJCOM guidance. The JM may perform a proficiency jump only after all other jumpers have left the aircraft or in the last formation exiting the aircraft.

1.6. Maximum Flight Duty Period Flight Time. AFMAN 11-202V3 lists maximum flight duty periods.

1.6.1. For normal operations, consider the UV-18 as a utility type aircraft.

1.6.2. When all missions in the flight duty period involve only point-to-point movement of the aircraft or passengers (i.e., no parachuting activities planned or performed), the UV-18 may be considered as a transport type aircraft.

1.6.3. The use of additional crewmembers to extend the flight duty period (augmented crew) is not authorized. **(T-3).**

1.7. Clothing Requirements. AFI 11-301V1, *Aircrew Flight Equipment (AFE) Program*, prescribes minimum aircrew clothing requirements. In the absence of specific guidance, all aircrew members will wear flight suits and flight boots while operating the aircraft. **(T-2).**

1.7.1. Aircrews will carry flight gloves and appropriate seasonal flight clothing. **(T-2).** Aircrew members will remove rings and scarves before performing aircrew duties. **(T-2).**

1.7.2. Aircrews will wear flight gloves during the exterior inspection and during critical phases of flight. **(T-3). Exception:** Gloves are not required if they hinder the aircrew's ability to safely conduct electronic flight instrumentation system (EFIS) operations.

1.8. Seatbelts and Shoulder Harnesses.

1.8.1. All occupants will have a designated seat with a seatbelt. **(T-2).**

1.8.2. All crewmembers will wear seatbelts at all times while operating the aircraft. **(T-2).** Aircrews will wear seatbelt and shoulder harnesses during critical phases of flight. **(T-2).**

1.8.3. Passengers will remain seated with seatbelts fastened during taxi, takeoff, landing, flight below 1,500 feet above ground level (AGL), and any other time as determined by the PIC. **(T-3).**

1.8.3.1. During taxi, the designated passenger monitors (see **paragraph 3.11**) may remove their seatbelt to handle unusual passenger situations. The passenger monitor should inform the pilot when removing the seatbelt.

1.8.3.2. Designated JMs may remove their seatbelts above 500 feet AGL or power cutback, whichever occurs first, to perform required passenger cabin duties.

1.8.4. Passengers without a parachute will remain seated with their seatbelts fastened or be secured to the aircraft by an approved restraining device when the air operable cargo (Lexan™) door is open. **(T-2).**

1.9. Oxygen Requirements. Guidance on oxygen requirements for passengers is provided in AFMAN 11-202V3 and AFI 11-409, *High Altitude Airdrop Mission Support Program*.

1.10. Cargo Restrictions.

1.10.1. Aircrews will not transport pets. **(T-2).**

1.10.2. Aircrews will transport only hazard class and division 1.4G (i.e., moderate fire, no blast) smoke grenades. **(T-2).**

1.10.2.1. Explosive operations will only be conducted according to written manuals which are approved by the unit commander. **(T-2).** Guidance on explosive operations is provided in Defense Explosives Safety Regulation (DESR) 6005.09_AFMAN 91-201, *Explosive Safety Standards*.

1.10.2.2. Only personnel trained according to AFI 91-202, *The US Air Force Mishap Prevention Program*, are authorized to handle explosive materials on the aircraft. **(T-2).**

1.10.3. Aircrews will not store explosives on the aircraft. **(T-2).**

1.11. Interfly. DAFMAN 11-401 defines interfly as the exchange and/or substitution of aircrews and aircraft between MAJCOMs. Units are not authorized to interfly. **(T-2).**

1.12. Aerial Events. Guidance on conducting aerial events is provided in AFI 11-209, *Participation in Aerial Events*, and AFI 11-410.

Chapter 2

MISSION PLANNING

2.1. Responsibilities. 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. Aircrews will accomplish sufficient flight planning to ensure safe mission accomplishment. **(T-1).** AFMAN 11-202V3 specifies minimum requirements.

2.2.2. Aircrews will compute takeoff and landing data for each flight. **(T-2).** MAJCOM-approved tabulated data may be used when available.

2.2.3. Aircrews will calculate single-engine service ceiling for flight over mountainous terrain. **(T-2)**. Additionally:

2.2.3.1. On an instrument flight rules (IFR) flight plan, the aircrew will only operate the aircraft along routes where the single-engine service ceiling exceeds the minimum IFR altitude as defined by AFMAN 11-202V3. **(T-3). Note:** The minimum IFR altitude provides 2,000 feet of terrain clearance in designated mountainous terrain.

2.2.3.2. On a visual flight rules (VFR) flight plan, the aircrew will not intentionally plan or fly a route over actual terrain less than 1,000 feet below the single-engine service ceiling. **(T-3).** For example, if single-engine service ceiling is calculated to be 14,000 feet mean sea level (MSL), pilots may not plan or fly over terrain higher than 13,000 feet MSL.

2.2.4. Guidance on manifesting passengers is provided in AFMAN 11-202V3.

2.3. Briefings and Debriefings.

2.3.1. Briefing. The PIC is responsible for presenting a logical briefing that will promote safe and effective mission accomplishment. **(T-2).** All pilots will attend the flight briefing. **(T-3).** The PIC will structure the flight briefing to accommodate the capabilities of each pilot in the flight. **(T-2).** The PIC will ensure copilots, JMs, and passengers are briefed on their specific duties and responsibilities related to safe mission accomplishment to include in-flight discipline. **(T-2).** JM briefing requirements are specified in AFI 11-410.

2.3.2. Minimum Briefing Times. The PIC will begin the briefing at least 30 minutes (single-ship) or one hour (formation) before scheduled takeoff. **(T-3).** On subsequent flights with the same crew on the same day, the PIC need only brief those items that have changed from the previous flights.

2.3.3. Briefing Guides.

2.3.3.1. Aircrews will refer to the appropriate briefing guides located in **Attachment 2** and **Attachment 3**, and before each mission, brief applicable items in sufficient detail to prevent any misunderstanding between crewmembers. **(T-2). Note:** Briefing guides are reference lists of items that may apply to particular missions. The flight manual contains the passenger briefing guide.

2.3.3.2. Items listed may be briefed in any sequence. Those items covered by written squadron 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.

2.3.4. Alternate Missions. If applicable, the PIC will brief an alternate mission for each flight. **(T-2).**

2.4. Maps and Charts. The aircrew will ensure a local sectional and VFR terminal area charts (class B airspace), or electronic equivalent, are on board the aircraft. **(T-2).** When flying outside the local area, the PIC will ensure charts covering the route of flight are on board the aircraft. **(T-2).** These charts must be appropriate for the type of mission flown. **(T-2).**

2.5. Required Documents. The following documents must be on board for flight:

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

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

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

2.5.4. AFTO Form 781, *ARMS Aircrew/Mission Flight Data Document*. **(T-2).**

2.5.5. Passenger manifest, if required (according to AFMAN 11-202V3). **(T-2).**

2.5.6. TO 1U-18(V)B-1. (hard copy or electronic) **(T-2).**

2.5.7. TO 1U-18(V)B-1CL-1, *Pilots Abbreviated Flight Crew Checklist, USAF Series UV-18B Aircraft*. (hard copy or electronic) **(T-2).**

2.5.8. A unit-developed pilot aid according to **paragraph 2.6** of this manual. **(T-2).**

2.6. Unit-Developed Checklists and Pilot Aids.

2.6.1. According to AFI 11-215, *Flight Manuals Program*, when aircrews use unit-developed checklists in lieu of flight manual checklists, the checklists must contain, as a minimum, all items (verbatim and in order) listed in the applicable flight manual checklist. Crewmembers will still carry a current flight manual checklist (hard copy or electronic) and have it immediately available on all flights. **(T-2).**

2.6.2. Unit-developed pilot aids will include the minimum following items:

2.6.2.1. Briefing guides. **(T-3).**

2.6.2.2. Local radio frequencies. **(T-3).**

2.6.2.3. Appropriate airfield diagrams, including aircraft arresting systems. **(T-3).**

2.6.2.4. Emergency information, including impoundment procedures, emergency action checklists, lost communications procedures, and divert information. **(T-3).**

2.6.2.5. Cross-country procedures, including command and control, aircraft security, and aircraft servicing. **(T-3).**

2.6.2.6. Local training areas. **(T-3).**

2.6.2.7. Stereo flight plans. **(T-3).**

2.6.2.8. Other information deemed necessary by the local unit. **(T-3).**

2.6.3. Units will forward all unit-developed pilot aides to MAJCOM standardization and evaluation for review prior to implementation. **(T-2).**

Chapter 3

NORMAL OPERATING PROCEDURES

3.1. Preflight.

3.1.1. Required Equipment.

3.1.1.1. An operable flashlight for each crewmember is required for night operations in accordance with AFMAN 11-202V3.

3.1.1.2. Crews remaining off-station overnight will carry chocks, engine intake covers, propeller locks, tiedown straps, pitot tube covers, and a key to lock the doors. **(T-3).**

3.1.2. Aircraft Systems. **Chapter 4** specifies the minimum equipment list.

3.1.3. High Winds or Jet Blast.

3.1.3.1. If gust locks were disengaged, the PIC will ensure the aircraft receives a maintenance inspection prior to flight if it has been subject to high wind or jet blast according to the following conditions:

3.1.3.1.1. Winds with a mean velocity equal to or greater than 30 knots from any direction. **(T-2). Note:** A mean wind speed of 30 knots may involve occasional gusts in excess of 50 knots.

3.1.3.1.2. Jet blast from any direction. **(T-2).**

3.1.3.2. If gust locks were engaged, the PIC will ensure the aircraft receives a maintenance inspection prior to flight if it has been subject to high wind or jet blast according to the following conditions:

3.1.3.2.1. Winds with a mean velocity equal to or greater than 48 knots within 25 degrees of aircraft nose-into-wind position. **(T-2).**

3.1.3.2.2. Winds with a mean velocity equal to or greater than 39 knots from up to 90 degrees of aircraft nose-into-wind position. **(T-2).**

3.1.3.2.3. Winds with a mean velocity equal to or greater than 30 knots from any other direction. **(T-2).**

3.1.3.2.4. Jet blast from any direction. **(T-2).**

3.1.4. Instrument Cockpit Check. Pilots will complete an instrument cockpit check prior to initial takeoff on every sortie. **(T-3). Exception:** An instrument cockpit check is not required when no instrument approaches are planned during a day local sortie.

3.1.5. Foreign Object Damage. To reduce the risk of foreign object damage and personal injury during ground operations, personnel will:

3.1.5.1. Not approach an operating engine. **(T-2).**

3.1.5.2. Avoid using excessive power, especially when backing. **(T-2).**

3.1.5.3. Avoid prop or jet blast from other aircraft. **(T-2).**

3.1.5.4. Ensure loose items are secure in the cockpit before opening the doors or windows. **(T-2).**

3.1.6. Minimum Runway Condition Reading/Condition Code (RCR/RwyCC).

3.1.6.1. Pilots will not operate the aircraft with an RCR less than 7, with braking action poor, or when the runway surface condition is "ice on runway." **(T-2). Note:** A runway surface condition reported as patchy (runway less than fully covered) is not restrictive when adequate unaffected runway is available.

3.1.6.2. Pilots will not take off or land when the RCR is less than or equal to the crosswind component (steady state or gust). **(T-2).** See **paragraph 3.3.6** for additional restrictions.

3.1.6.3. Aircrews will consult the Flight Information Handbook's RCR correlation chart for adjustments to landing distance with RCR below "dry." **(T-2). Note:** With braking action poor or RCR below 7, landing distance could be doubled, potentially exceeding 3,000 feet.

3.1.6.4. Aircrews operating from civil airports will not be provided an RCR. Instead they will be provided a RwyCC. RCRs will still be available at USAF locations. Consult the Flight Information Handbook's Runway Condition Assessment Matrix correlation chart for equivalency between RwyCC and RCR. Aircrews will use the conversions in the Runway Condition Assessment Matrix chart for mission planning at civil airports. **(T-1).** When a RwyCC is given that has an RCR range equivalent, aircrews will use the most conservative RCR number. **(T-1).**

3.2. Ground and Taxi Operations.

3.2.1. Refueling Operations. Personnel not actively involved in refueling will remain at least 50 feet away from an aircraft refueling operation. **(T-3).** In addition, aircrews will not operate the engine, taxi, or radiate electromagnetic energy (radio, distance measuring equipment [DME], cell phones, or transponder operation) within the 50-foot safety zone. **(T-2).**

3.2.2. Visual Signals. Pilots will ensure systems that could pose any danger to the ground crew are not activated before receiving proper acknowledgment from ground personnel. **(T-2).** When ground intercom is not used, pilots and ground crews will use visual signals in accordance with AFMAN 11-218, *Aircraft Operations and Movement on the Ground*, and this manual. **(T-2).** The ground crew will repeat the given signal when it is safe to operate the system. **(T-2).**

3.2.3. Aircraft Start. The PIC will:

3.2.3.1. Not start the engines without a fireguard. **(T-3).** If an external fireguard is not available, a crewmember will act as the fireguard. **(T-3).**

3.2.3.2. Not allow an individual who is not qualified or not in training leading to qualification to start engines or taxi the aircraft. **(T-2).**

3.2.3.3. Ensure the area around the propellers is clear and that all passengers are properly seated before starting engines. **(T-2).**

3.2.4. Minimum Spacing and Taxi Interval. Guidance on minimum taxi clearances are provided in AFMAN 11-218. In addition, pilots will:

3.2.4.1. Taxi UV-18 formations staggered with a minimum of 100 feet or 250 feet if in trail. **(T-3).**

3.2.4.2. Maintain at least 100 feet of spacing behind single-engine light aircraft. **(T-3).**

3.2.4.3. Maintain at least 250 feet of spacing behind multi-engine or jet aircraft. **(T-3).**

3.2.4.4. Maintain a minimum of 500 feet behind taxiing helicopters. **(T-3).**

3.2.5. Aircrews will not conduct ground operations when surface winds exceed 35 knots (steady state or gusting). **(T-2).**

3.2.6. Aircrews will not exceed the 25 knots maximum taxi speed. **(T-3).** Aircrews will not taxi across any lowered web barriers unless below the maximum taxi speed. **(T-3).**

3.2.7. Only certified crewmembers will accomplish reverse taxi. **(T-3).** They will use marshallers or spotters to clear the area behind the aircraft during reverse taxi. **(T-3).**

3.2.8. Engine Runup.

3.2.8.1. Aircrews will accomplish a full engine runup on the first flight of the day. **(T-2).**

3.2.8.2. The pilot not flying (PNF) will guard the brakes during static engine runup checks to prevent undetected aircraft movement and remain vigilant for other traffic. **(T-2).**

3.2.9. Aircrews in the cockpit will not change seats on the ground with the engines running unless there is a pilot (or engine run qualified maintenance specialist) at the controls at all times to guard the brakes. **(T-2).**

3.2.10. The squadron commander must approve engine running on-load/off-load operations. **(T-2).** Units will provide specific engine running on-load/off-load guidance. **(T-3).**

3.3. Takeoff and Landing.

3.3.1. Runway.

3.3.1.1. The minimum runway required for normal UV-18 operations (takeoff or landing) is 3,000 by 40 feet of useable, hard surface. **(T-3).** The operations group (OG) commander may approve operations on shorter runways, but must ensure the takeoff and/or landing distances do not exceed 80 percent of the useable runway. **(T-2).** Aircrews will not consider runway available after departure end above-ground aircraft arresting cables as useable for landing, but it is available for taxi. **(T-2).**

3.3.1.2. Pilots will not takeoff over a raised web barrier unless the minimum runway available and the planned rate of climb will clear the barrier by 35 feet. **(T-2).**

3.3.1.3. Pilots will only accomplish intersection takeoffs if the useable runway remaining is 3,000 feet or greater. **(T-3).** When aircrews use less than the entire runway for takeoff, they will calculate takeoff data based on the actual runway remaining from the point where takeoff starts. **(T-2).**

3.3.2. Pilots will not takeoff if the maximum gross weight exceeds 12,500 pounds. **(T-2).**

3.3.3. Minimum Rate of Climb.

3.3.3.1. For VFR departures, the PIC will ensure a positive single-engine rate of climb. **(T-2).**

3.3.3.2. For IFR departures, aircrews will comply with AFMAN 11-202V3.

3.3.4. Weather Requirements.

3.3.4.1. IFR Departure Planning. Aircrews will comply with the departure planning guidance in AFMAN 11-202V3. Aircrews are not authorized to use special departure procedures to meet one-engine climb performance requirements. **(T-2).**

3.3.4.2. For an IFR takeoff, the PIC will ensure the existing weather is at or above compatible IFR landing minimums at the departure airfield. **(T-2).**

3.3.4.3. For IFR landings, pilots will use a 200-foot ceiling and 1/2-mile visibility (i.e., runway visual range of 2,400 feet) or published minimums, whichever is higher, to determine IFR landing minimums. **(T-2).**

3.3.5. Reduced same runway separation is authorized in accordance with AFMAN 13-204V3, *Air Traffic Control*.

3.3.6. IPs will not takeoff nor land if the wind speed exceeds the maximum crosswind limit of 23 knots. All other pilots will use a maximum crosswind limit of 18 knots. **(T-2).** Pilots will use the maximum crosswind (including gusts) to determine if winds exceed pilot or aircraft limits for takeoff or landing. **(T-2).**

3.3.7. Aircrews will not perform touch-and-go landings with the air operable cargo (Lexan™) door open. **(T-2).**

3.3.8. Flaps.

3.3.8.1. Aircrews will perform takeoffs using 10 degrees of flaps except during no-flap takeoff demonstrations when required by a training syllabus. **(T-3).**

3.3.8.2. Aircrews will only fly full-flap landings to a full stop or a stop-and-go. **(T-3).**

3.4. Fuel Requirements. The PIC will declare minimum fuel or emergency fuel to the controlling agency any time it becomes apparent an aircraft will land at the base of intended landing (or alternate if required) with less than the required fuel reserve. **(T-1).**

3.4.1. With 300 pounds or less, PIC will declare minimum fuel. **(T-1).**

3.4.2. With 200 pounds or less, PIC will declare emergency fuel. **(T-1).**

3.5. Minimum Altitudes.

3.5.1. Aircrews will perform all portions of stalls, slow flight, unusual attitude recoveries, abnormal flight recoveries, minimum controllable airspeed demonstrations, and formation confidence maneuvering exercises above 2,000 feet AGL. **(T-2).**

3.5.2. Aircrews will not conduct parachute operations below 2,500 feet AGL. **(T-2).** **Exception:** The Air Force Parachute Team minimum for parachute operations in accordance with AFI 11-410 is waiverable to 2,000 feet AGL by the drop zone control officer (DZCO).

3.5.3. Aircrews will not practice formation lost wingman procedures at or below 2,000 feet AGL. **(T-2).**

3.5.4. Aircrews will not fly in-flight propeller feathering demonstrations below 2,000 feet AGL. **(T-2).**

3.5.5. Aircrews will not reduce power after takeoff until reaching 400 feet AGL or as required for obstacle clearance, whichever is higher. **(T-2).**

3.5.6. The PIC will ensure the aircraft is at least 1,000 feet AGL before permitting seat changes. **(T-2).** Change seats only during a noncritical phase of flight. **(T-2).**

3.6. In-Flight Weather Requirements.

3.6.1. If lightning or thunderstorms are reported within 10 nautical miles of the area of operation, the PIC will ensure the aircraft is not exposed to hail, lightning, windshear, or microbursts. **(T-2).** The PIC will cease jump operations and traffic pattern operations when lightning is within 5 nautical miles. **(T-2).**

3.6.2. Without weather radar (**Table 4.1**):

3.6.2.1. The PIC will maintain visual meteorological conditions (VMC) in areas of forecast thunderstorms. **(T-2).**

3.6.2.2. Aircrews will not fly into areas of actual thunderstorms. **(T-2).**

3.6.3. Aircrews will not fly into areas of known or forecast icing conditions greater than moderate. **(T-2)**.

3.6.4. Aircrews will not fly into areas of known or reported turbulence greater than moderate. **(T-2).**

3.6.5. Aircrews will conduct all stalls, slow flight, unusual attitude recoveries, minimum controllable airspeed demonstrations, and all formation operations in day, VMC. **(T-2).**

3.6.6. Aircrews will not conduct jump operations with a cloud ceiling below 2,500 feet AGL. **(T-2).** The PIC will ensure all jump operations are conducted in VMC and will not allow jumpers to exit the aircraft into or through a cloud. **(T-2).**

3.7. IP-Required Maneuvers. An IP must be at a set of controls to perform the following maneuvers:

3.7.1. Power-on stalls. **(T-3).**

3.7.2. Traffic pattern stalls. **(T-3).**

3.7.3. All simulated single-engine training, including propeller feathering demonstrations, approaches, and landings. **(T-3).**

3.7.4. No-flap takeoffs. **(T-3).**

3.7.5. Minimum controllable airspeed demonstrations. **(T-3).**

3.7.6. Touch-and-go landings. **(T-3).**

3.7.7. Full-flap landings. **(T-3).**

3.8. Instrument and Navigation Procedures.

3.8.1. To determine instrument approach minimums, pilots will consider the UV-18 a category "A" aircraft. **(T-2).** When circling requires an approach flown above 90 knots indicated airspeed (KIAS), the pilot will apply the higher category minimums, as applicable. **(T-2).**

3.8.2. Two global positioning system (GPS) systems are available for use in the UV-18.

3.8.2.1. The Chelton Flight Logic electronic flight instrumentation system-SV EFIS equipment using the Chelton Flight Systems (CFS) Beta-3 GPS/Wide Area Augmentation System (WAAS) receiver is certified in accordance with Federal Aviation Administration (FAA) Technical Standard Order (TSO) C-146a, *Stand-alone Airborne Navigation Equipment Using the Global Positioning System (GPS) Augmented by the Wide Area Augmentation System (WAAS)*. The EFIS meets the requirements of Radio Technical Committee for Aeronautics DO-229C, *Minimum Operational Performance Standards for Global Positioning System/Wide Area Augmentation System Airborne Equipment*, Class Gamma 1.

3.8.2.2. This equipment complies with FAA Advisory Circular 20-138D, *Airworthiness Approval of Positioning and Navigation Systems,* for navigation using GPS and WAAS (including "GPS", "or GPS", and "area navigation (RNAV)" approaches), and approach procedures with vertical guidance (including "lateral navigation (LNAV)/vertical navigation (VNAV)" and localizer performance with vertical guidance ["LPV"]). Based on compliance with FAA TSO C-146a, this equipment also complies with FAA Advisory Circular 90-100A, *U.S. Terminal and En Route Area Navigation (RNAV) Operations,* for navigation on U.S. RNAV routes, Q-routes and T-routes, departure procedures, and standard terminal arrivals.

3.8.2.3. Approved instrument approaches (with an asterisk in the database) may be flown to LNAV, LNAV/VNAV, or LPV minimums when WAAS or fault detection and exclusion is available (no GPS caution flags displayed) and such minimums are published. In actual instrument meteorological conditions (IMC), aircrews will not continue a GPS instrument approaches beyond the final approach fix when WAAS or fault detection and exclusion is not available. **(T-2).**

3.8.3. VNAV Systems. Use of the CFS GPS/WAAS VNAV functions is approved for IFR during en route, terminal area, and nonprecision approach operations. This system is certified in accordance with FAA TSO C-146a. When vertical deviation symbology is not displayed, the pilot is restricted to no lower than LNAV minimums on instrument approaches. **(T-2).**

3.8.4. Simulated Instrument Flight. Aircrews will not use vision restricting devices to simulate IMC. **(T-2).**

3.8.5. Holding Airspeed. Aircrews will use 120 KIAS (two-engine) or 100 KIAS (single-engine) for holding. **(T-2).**

3.9. Night Procedures.

3.9.1. Aircrews will ensure that all required exterior and interior lights are operational. **(T-2).** Aircrews will perform an instrument cockpit check prior to all night flying. **(T-2).**

3.9.2. The landing lights may be used to provide additional illumination for taxi.

3.9.3. Aircrews will not perform no-flap takeoff demonstrations at night. **(T-2).**

3.9.4. For all night operations, the PIC will not fly/file to a destination other than a home station unless there is an operable straight-in approach with glidepath guidance. **(T-2).** A visual descent path indicator, precision approach guidance system, or GPS/WAAS VNAV guidance from a published RNAV (GPS) approach constitutes acceptable glidepath guidance.

3.10. Formation Procedures.

3.10.1. The maximum formation size is three aircraft. Aircrews will not fly formations of more than three aircraft or dissimilar formations without OG commander approval. **(T-3).**

3.10.2. Lead Change.

3.10.2.1. Pilots will not initiate a lead change unless the aircraft assuming the lead is in a position from which the lead change can be safely initiated and visual contact maintained. **(T-2).**

3.10.2.2. Aircrews will not perform lead changes within a formation unless the formation below 500 feet AGL. **(T-2).**

3.10.3. Takeoff.

3.10.3.1. For a formation takeoff, the pilot will ensure a minimum interval between aircraft of 15 seconds with the previous aircraft airborne. **(T-2).**

3.10.3.2. Pilots will not fly a two-ship echelon lineup unless the runway is at least 80 feet wide. **(T-2).**

3.10.3.3. Pilots will not fly three-ship echelon lineup unless the runway is at least 120 feet wide. **(T-2).**

3.10.3.4. When the runway width prevents echelon lineup, aircrews will line up in trail with 300 feet of spacing minimum between aircraft. **(T-3).** If runway length precludes lining up with spacing on the runway, the wingmen will remain clear of the runway until the previous aircraft has started takeoff roll. **(T-2).**

3.10.4. Aircrews will not conduct formation approaches and landings. **(T-2).** When an aircraft malfunction requires a chase aircraft, the chase aircraft aircrew will maintain a minimum altitude of 500 feet AGL. **(T-2).**

3.10.5. Formation Maneuvers. The PIC will:

3.10.5.1. Limit maneuvering to approximately 30 degrees of bank or 10 degrees of pitch when in pre-jump position. **(T-3).**

3.10.5.2. Not exceed 45 degrees of bank angle when in route position. **(T-3).**

3.10.5.3. Not exceed 45 degrees of bank angle when in echelon position. **(T-3).**

3.10.5.4. Ensure a minimum spacing between aircraft during jump operations of 100 feet lateral and 150 feet vertical when in the jump position. **(T-3).** The PIC will limit maneuvering to approximately 20 degrees of bank. **(T-3).**

3.10.5.5. Ensure the chase aircraft flies no closer than route position unless required for observation of the supported aircraft. **(T-3).**

3.10.6. Lost Wingman Procedures. Aircrews will not conduct formation flight into weather conditions other than VMC. **(T-2).**

3.10.6.1. Wingman Procedures (Number Two). If the formation inadvertently enters weather and the number two loses sight of lead, the wingman will simultaneously transition to instruments, inform lead, and perform the following procedures:

3.10.6.1.1. If the formation is in straight flight (climbing, descending or level), turn away from lead using 15 degrees of bank for 15 seconds. **(T-3).** Then, reverse the turn to resume the previous course. **(T-3).** Obtain a separate clearance, if required.

3.10.6.1.2. If the formation is turning and the wingman is:

3.10.6.1.2.1. Outside the turn, reverse the direction of the turn using 15 degrees bank for 15 seconds. **(T-3).** Then, roll out and continue straight ahead to ensure separation before resuming the turn. **(T-3).**

3.10.6.1.2.2. Inside the turn, momentarily reduce power to ensure nose-tail separation and inform lead to roll out of the turn. **(T-3).** Maintain angle of bank to ensure lateral separation. **(T-3).** Lead may resume the turn only when separation is ensured.

3.10.6.2. Wingman Procedures (Number Three). If the formation inadvertently enters the weather and number three loses sight, the wingman will simultaneously transition to instruments, inform lead, and perform the following procedures:

3.10.6.2.1. If the formation is in straight flight (climbing, descending, or level), turn away from lead using 30 degrees of bank for 30 seconds. **(T-3).** Then, reverse the turn to resume the previous course. **(T-3).** Obtain a separate clearance, if required.

3.10.6.2.2. If the formation is turning (climbing, descending, or level) and the wingman is:

3.10.6.2.2.1. Outside the turn, reverse the direction of the turn using 30 degrees bank for 30 seconds. **(T-3).** Then, roll out and continue straight ahead to ensure separation before resuming the turn. **(T-3).**

3.10.6.2.2.2. Inside the turn, momentarily reduce power to ensure nose-tail separation and inform lead to roll out of the turn. **(T-3).** Increase angle of bank by 15 degrees to ensure lateral separation. Lead may resume the turn only when separation is ensured.

3.10.6.3. Lead Procedures. Lead will immediately perform the appropriate procedure, acknowledge the lost wingman's radio call, and transmit lead's aircraft attitude which the wingman will acknowledge. **(T-3).** Lead should transmit other parameters such as heading, altitude, and airspeed as necessary to aid in maintaining safe separation. Air traffic control may also assist in ensuring positive separation.

3.10.7. Knock-It-Off (KIO) Procedures. Any flight member may make a “knock it off” call to terminate maneuvering. When a dangerous situation is developing, flight members will be directive first. **(T-3).** All participants will acknowledge a KIO by repeating the call. **(T-3).**

Aircrews will use KIO procedures to terminate maneuvering when a dangerous situation is developing. **(T-3).** It may also be used when training is complete.

3.11. Passenger Transport Procedures.

3.11.1. When carrying passengers, the PIC will designate an additional crewmember or a JM as a passenger monitor. **(T-2).** The passenger monitor will:

3.11.1.1. Ensure all passengers are briefed according to the TO 1U-18(V)B-1CL-1 passenger briefing guide. **(T-2).**

3.11.1.2. Remain on headset unless authorized to remove the headset by the PIC. **(T-2).**

3.11.1.3. Give passengers directions during emergencies. **(T-2).**

3.11.2. If no jump operations are planned, the air operable cargo door (Lexan™) will remain closed. **(T-2).**

3.11.3. When the Lexan™ door is open, passengers without a parachute will remain seated with their seatbelts fastened or be secured to the aircraft by an approved restraining device. **(T-2).**

3.11.4. If passengers remain on board after all jumpers have left the aircraft:

3.11.4.1. A qualified JM or an additional aircrew passenger will ensure the Lexan™ door is closed and secured, and will land with the aircraft. **(T-2). Exception:** If all remaining passengers are JMs, rated aircrew, or career enlisted aviators, the Lexan™ door may remain open for landing with all passengers seated and their seatbelts fastened.

3.11.4.2. The PIC will coordinate with the JM or additional aircrew passenger to ensure all appropriate automatic activation devices are off and all passengers are secure for landing. **(T-2).** The PIC will not exceed a 1,000 feet per minute descent rate until all appropriate automatic activation devices are turned off. **(T-2).**

3.11.4.3. The aircrew will plan for the additional weight when returning to land with passengers on board. **(T-2).**

3.12. Simulated Emergency Procedures.Note: Practice no-flap landings are not emergency procedures.

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

3.12.2. Aircrews will conduct simulated emergency training only during day VMC. **(T-2).**

3.12.3. Aircrews will not practice simulated emergencies in-flight without an operable interphone. **(T-3).**

3.12.4. Aircrews will not practice compound or multiple simulated emergencies in-flight. **(T-3).**

3.12.5. Aircrews will not practice simulated emergency procedures with jumpers on board. **(T-3).**

3.12.6. Aircrews will not compound simulated single-engine circling approaches or low closed patterns with any other simulated malfunctions. **(T-3).**

3.12.7. Aircrews will fly all simulated single-engine landings to a full stop or stop-and-go landing. **(T-3).** During simulated single-engine landings, IPs will ensure both prop levers are returned to full increase prior to crossing the runway threshold. **(T-3).** Pilots will not select reverse thrust during landing roll. **(T-3).**

3.12.8. IPs will ensure the aircraft does not descend below 300 feet AGL during practice single-engine go-arounds. **(T-3).**

3.13. Non-towered Airfield (NTA) Operations.

3.13.1. With the OG commander's approval, aircrews may conduct operations at non-towered, public-use airfields as follows:

3.13.1.1. Single ship night NTA operations require operations supervisor approval. **(T-3).**

3.13.1.2. Formation NTA operations require operations supervisor approval. **(T-3).** Night formation NTA operations are not authorized. **(T-2).**

3.13.1.3. Winds must be within limits for each runway to which the aircrew operates as best as can be determined with available information. **(T-2).**

3.13.1.4. In the event a landing is required at an NTA, the unit will ensure fire or crash recovery (according to Air Force Pamphlet (AFPAM) 32-2004, *Aircraft Fire Protection for Exercises and Contingency Response Operations*) and maintenance personnel, as appropriate to the situation, are available for the subsequent launch. **(T-2).**

3.13.1.5. Aircrews will monitor the published common traffic advisory frequency and make all radio calls and position reports recommended in the *Aeronautical Information Manual (AIM).* **(T-2).**

3.13.1.6. Instrument approaches, rectangular patterns (as depicted in the AIM), and emergency procedures may be flown. Aircrews will not fly overhead patterns. **(T-2).**

3.13.1.7. Aircrews will fly instrument approaches under an IFR clearance, unless waived in accordance with AFMAN 11-202V3. **(T-2).**

3.13.1.8. Weather restrictions for instrument approaches are as listed in **paragraph 3.3.4** of this manual.

3.13.1.9. If the aircrew is approaching the airfield on an IFR clearance and not intending to fly an instrument approach, the PIC will ensure weather conditions permit a VFR descent from the appropriate IFR en route altitude in accordance with AFMAN 11-202V3. **(T-0).**

3.13.1.10. Aircrews will immediately notify the operations supervisor if any hazardous conditions exist at an NTA that would prevent normal operations. **(T-3).**

3.13.2. Each OG commander will approve and require a training program to prepare aircrews to operate in the NTA environment. **(T-3).** As a minimum, the program will include a discussion of FAA Advisory Circular 90-66B, *Non-Towered Airport Flight Operations*, as well as uncontrolled airfield operation portions of the current U.S. Code of Federal Regulations and the AIM. **(T-3).** Training will emphasize standard civilian radio phraseology. **(T-3).**

3.14. Functional Check Flights (FCF).

3.14.1. FCF pilots will not conduct an FCF with other type missions except FCF continuation training or FCF upgrade training flight. **(T-2).** Only FCF pilot or a pilot in training status with an FCF IP on board will accomplish FCF requirements. **(T-2).**

3.14.2. The OG commander may waive a complete FCF and authorize an FCF to check only systems disturbed by maintenance, inspection, or modification.

3.14.3. FCF aircrews will only fly maneuvers in accordance with TO 1U-18(V)B-6CF-1, *Acceptance and Functional Check Flight Procedures (Commercial Manual), USAF Series UV-18B Aircraft,* on FCF missions. **(T-2).**

3.15. Mandatory Advisory Calls. Mandatory advisory calls while in IMC, or simulated IMC, for the PNF are listed below. (**Note:** minimum descent altitude (MDA) and decision height (DH) are determined using the guidance in **paragraph 3.3.4** of this manual.)

3.15.1. Nonprecision Approaches. The PNF will state:

3.15.1.1. "One hundred feet" above MDA. **(T-2).**

3.15.1.2. "Minimums" at MDA. **(T-2).**

3.15.1.3. "Continue" when the runway environment is in sight. **(T-2).**

3.15.1.4. "Go-around" at missed approach point if the runway environment is not in sight or the aircraft is not in a safe position to land. **(T-2).**

3.15.2. Precision Approaches. The PNF will state:

3.15.2.1. "One hundred feet" above DH. **(T-2).**

3.15.2.2. "Land" at DH if the runway environment is in sight and the aircraft is in a position for a safe landing. **(T-2).**

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

3.15.3. Climb-Out or Descent. The PNF will state:

3.15.3.1. Transition altitude or transition level. **(T-2).**

3.15.3.2. One thousand feet above or below assigned altitude. **(T-2).**

3.15.3.3. One thousand feet above initial approach fix altitude or holding altitude. **(T-2).**

3.15.3.4. One hundred feet above procedure turn and final approach fix altitude. **(T-2).**

3.16. Transfer of Aircraft Control. Both pilots must know at all times who has control of the aircraft. **(T-1).** In all cases, the pilot assuming control of the aircraft will state, "I have the aircraft" and will shake the yoke. **(T-2).** The pilot relinquishing control will state, "You have the aircraft." **(T-2).** Once assuming control of the aircraft, that pilot will maintain control until relinquishing it as stated above. **(T-2).**

3.17. Post Flight. After flight, aircrews will:

3.17.1. Complete AFTO Form 781 and notify maintenance of discrepancies. **(T-2).**

3.17.2. Ensure the wheel chocks, and if wind conditions warrant, control locks are installed before leaving aircraft. **(T-2).**

Chapter 4

OPERATING RESTRICTIONS

4.1. Minimum Equipment List.Table 4.1 contains the minimum operational equipment and systems considered essential for safe flight. Any item the PIC considers essential to mission completion will be fixed or corrected prior to flight. **(T-3).** Consult squadron supervisors for additional guidance, if necessary.

4.2. Waivers. The OG commander may waive the equipment requirements of **Table 4.1** for operational necessity.

Table 4.1. UV-18 Minimum Equipment List.

Equipment	Installed	Required	Remarks
Communication radios	2 very high frequency (VHF) 1 ultra high frequency	1 VHF	Jump operations require any 2 suitable radios.
Passenger address	1	0	Oral announcement by a JM suffices.
Fire extinguishers	2	1	Accessible to passengers and crew.
Wing tank system	1	0	Applies to aircraft with wing tanks only.
Hydraulic low pressure light (if installed)	1	0	Monitor hydraulic pressure closely on the hydraulic gauges.
Bleed air/heat	-	-	Required for any forecast or reported icing conditions and for remaining over night.
All icing systems	1	0	Required for any forecast or reported icing conditions and for remaining over night.
Landing lights	2	1	Do not operate in the “Pulse” position.
Cockpit and instrument lights	-	-	Sufficient lighting to illuminate instruments is required for night flights.
Wing inspection lights	2	0	Required for any forecast or reported icing conditions and for remaining over night.
Passenger lights (fasten seatbelts and no smoking)	1	0	Required if carrying jumpers or passengers unless a JM or additional crewmember is on headset.
JM lights red and green	1	0	Note 2.
Standby attitude indicators	2	1	
Standby airspeed indicators	2	1	
Standby altimeter	2	1	
Automatic direction finder (ADF)	1	0	Required if destination or alternate approach requires ADF.
VHF omnidirectional range/Instrument Landing System (VHF Nav)	2	1	Two required for cross-country or remain overnight.

Equipment	Installed	Required	Remarks
DME	1	0	Without DME, CFS GPS must be operational. Note 1.
CFS GPS	1	1	Note 1.
Weather radar	1	0	Required for flights near areas of forecast or actual thunderstorms.
Automatic feathering	1	0	Note 3.
Flight data recorder	1	0	Note 4.
Cockpit Voice Recorder	1	0	Note 4.
Air data computer	1	1	
Attitude and Heading Reference System	1	1	
EFIS screens	3	2	Note 5.
Traffic Collision Avoidance System	1	1	
Terrain Awareness and Warning System/Radar Altimeter	1	0	Required for night, IMC, low-level navigation, or off-station sorties.

Notes:

1. Required for IFR flight. See TO 1U-18(V)B-1 for functions lost with this failure.

2. Required if mission includes jump operations and if interphone cannot be used.

3. When automatic feathering is inoperative, an IP must accomplish the takeoff. **(T-2).** Review the appropriate manual feathering procedures before takeoff and use if necessary. Climb gradient will be affected, the IP will calculate climb data using the Autofeather Inoperative (Propeller Windmilling) charts in TO 1U-18(V)B-1. **(T-2).**

4. Required for passenger/jumper carrying missions.

5. Applies to screen failure only. All three screens must be functional to depart the home station. For remaining screens, all EFIS functions and all standby instruments must be operational. Prior to departure, install an operable unit in the pilot position.

Chapter 5

PARACHUTING OPERATIONS

5.1. General. This chapter describes procedures for conducting parachute operations to include wind drift indicator (WDI) and personnel airdrops. Coordination between the PIC, the JM, and the DZCO is the key to successful parachuting operations.

5.2. Drop Zone (DZ) Requirements. Units will conduct all training jumps in DZs that are surveyed and approved according to AFI 11-410. **(T-1).**

5.3. Air Operable Cargo (Lexan™) Door Procedures.

5.3.1. The Lexan™ door will remain closed below 1,500 feet AGL. **(T-3).**

5.3.2. The pilot will authorize opening the Lexan™ door. **(T-3).** The initial clearance to open the door is valid for all jump operations on that sortie, unless the PIC directs the JM to keep the door closed.

5.3.3. Only a qualified JM or an additional aircrew member will open the door. **(T-2).**

5.4. WDI Drop Procedures.

5.4.1. The JM will determine the WDI drop altitude which is normally 3,000 feet AGL. **(T-3).** Aircrews will maintain a minimum WDI drop altitude of 2,000 feet AGL. **(T-2).**

5.4.2. Pilots will fly WDI drop passes as coordinated with the JM which is normally 80 to 85 KIAS with 10 degrees of flaps. **(T-3).**

5.4.3. The pilot will turn on the green jump clearance light prior to the WDI drop and the red jump clearance light immediately after the WDI drop. **(T-3).**

5.4.4. Units will publish procedures for monitoring the WDI during its descent. **(T-3).**

5.4.5. After the WDI drop, the JM will brief proposed jump runs to the pilot. **(T-3).**

5.5. Personnel Airdrop Procedures.

5.5.1. The JM will coordinate the airdrop airspeed with the pilot. **(T-3).** Aircrews will not exceed the maximum airdrop airspeed of 140 KIAS. **(T-2).**

5.5.2. The JM will determine the airdrop altitude. **(T-2).** The minimum airdrop altitude will in accordance with **paragraph 3.5.2** **(T-2).** Aircrews will not exceed the maximum airdrop altitude of 17,500 feet MSL. **(T-2).**

5.5.3. The pilot will coordinate final jump run approval with the DZCO. **(T-2).**

5.5.4. The red jump clearance light will be on at all times until clearance is received from the DZCO. **(T-3).** Once cleared for the drop, the pilots will turn on the green jump clearance light prior to the airdrop and the red jump clearance light immediately after the airdrop. **(T-3).**

5.5.5. The pilots will adjust the airdrop pattern to maintain adequate intervals between personnel airdrops. **(T-3).** Units will determine the minimum intervals between each type of airdrop. **(T-3).**

5.5.6. On the jump run final, the pilots will make heading corrections as requested by the JM using the interphone or the directional command steering lights. **(T-3).** The pilot will make heading corrections using rudder only. **(T-2).**

5.5.7. Aircrews will not perform static line personnel airdrops. **(T-2).**

5.6. Negative Drop Procedures.

5.6.1. The pilot will turn on the red jump clearance light and terminate an airdrop any time:

5.6.1.1. An unsafe condition develops. **(T-2).**

5.6.1.2. The JM directs a go-around. **(T-2).** Notify the DZCO. **(T-2).**

5.6.1.3. The DZCO cancels the drop clearance. **(T-2).** Notify the JM. **(T-2).**

5.6.1.4. Another aircraft becomes a conflict with the flight or the jumpers. **(T-2).**

5.6.1.5. The pilots or JM determine that jumpers will not land within the DZ. **(T-2).**

5.6.2. If the aircraft is on final for a jump run, the pilot will bank the aircraft to the right and call "negative drop" on the interphone. **(T-2).**

5.7. Communications.

5.7.1. The pilots will notify the appropriate air traffic control facility of the highest airdrop altitude prior to conducting parachuting operations. **(T-1).**

5.7.2. Aircrews will maintain in-flight communications with a DZCO during all parachuting operations. **(T-1).** Aircrews must have a DZCO clearance before WDI or personnel airdrop. **(T-1).**

JOSEPH T. GUASTELLA Jr., Lt Gen, USAF
Deputy Chief of Staff, Operations

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

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

AFI 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure, 2*1 September 2018

AFMAN 11-2UV-18V1, *UV-18 Aircrew Training*, 28 April 2020

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

AFI 11-209, *Participation in Aerial Events,* 22 May 2018

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

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

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

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

AFI 11-409, *High Altitude Airdrop Mission Support Program,* 9 September 2015

AFI 11-410, *Personnel Parachute Operations,* 4 August 2008

AFMAN 13-204V3, *Air Traffic Control*, 22 July 2020

AFPAM 32-2004, *Aircraft Fire Protection for Exercises and Contingency Response Operations,* 25 September 2014

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

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

DESR 6005.09_AFMAN 91-201, *Explosive Safety Standards,* 28 May 2020

DoD Flight Information Publication (Enroute), *Flight Information Handbook,* 5 August 2020

AFI 91-202, *The US Air Force Mishap Prevention Program*, 12 March 2020

TO 1U-18(V)B-1, *Flight Manual, USAF Series UV-18B Aircraft,* 15 October 2010

TO 1U-18(V)B-1CL-1, *Pilots Abbreviated Flight Crew Checklist, USAF Series UV-18B Aircraft,* 1 January 2018

TO 1U-18(V)B-6CF-1, *Acceptance and Functional Check Flight Procedures (Commercial Manual), USAF Series UV-18B Aircraft,* 30 November 2010

Aeronautical Information Manual (AIM), 16 July 2020

Air Almanac, 31 October 2019

FAA Advisory Circular 20-138D, *Airworthiness Approval of Positioning and Navigation Systems,* 4 July 2016

FAA Advisory Circular 90-66B, *Non-Towered Airport Flight Operations,* 13 March 2018

FAA Advisory Circular 90-100A, *U.S. Terminal and En Route Area Navigation (RNAV) Operations*, 14 April 2015

FAA TSO C-146a, *Stand-alone Airborne Navigation Equipment Using the Global Positioning System (GPS) Augmented by the Wide Area Augmentation System (WAAS)*, 19 February 2002

Radio Technical Committee for Aeronautics DO-229C, *Minimum Operational Performance Standards for Global Positioning System/Wide Area Augmentation System Airborne Equipment*, November 28, 2001

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

Title 5 United States Code Section 552a

Adopted Forms

DD Form 175, *Military Flight Plan*

AF Form 847, *Recommendation for Change of Publication*

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

Abbreviations and Acronyms

ADF—automatic direction finder

AFE—aircrew flight equipment

AFI—Air Force Instruction

AFMAN—Air Force Manual

AGL—above ground level

AIM—Aeronautical Information Manual

CFS—Chelton Flight Systems

DAFI—Department of the Air Force Instruction

DAFPD—Department of the Air Force Policy Directive

DESR—Defense Explosives Safety Regulation

DH—decision height

DME—distance measuring equipment

DZ—drop zone

DZCO—drop zone control officer

EFIS—electronic flight instrumentation system

FAA—Federal Aviation Administration

FCF—functional check flight

GPS—global positioning system

IFR—instrument flight rules

IMC—instrument meteorological conditions

IP—instructor pilot

JM—jumpmaster

KIAS—knots indicated airspeed

KIO—knock it off

LNAV—lateral navigation

LPV—localizer performance with vertical guidance

MAJCOM—major command

MDA—minimum descent altitude

MSL—mean sea level

NTA—non-towered airfield

OG—operations group

OPR—office of primary responsibility

PIC—pilot in command

PNF—pilot not flying

RCR—runway condition reading

RNAV—area navigation

RwyCC—runway condition code

TO—technical order

TSO—technical standard order

VFR—visual flight rules

VHF—very high frequency

VMC—visual meteorological conditions

VNAV—vertical navigation

WAAS—wide area augmentation system

WDI—wind drift indicator

Terms

Aeronautical Information Manual—The FAA's official guide to basic flight information and air traffic control procedures. (**https://www.faa.gov/air_traffic/publications/**).

Air Almanac—Issued annually, the almanac contains astronomical data for use in navigation. It is available from the Government Printing Office. A suitable calculator is available from the US Naval Observatory.

Bingo Fuel—A pre-briefed fuel state that allows the aircraft to return to the base of intended landing or an alternate using normal recovery procedures.

Critical Phases of Flight—Periods of time during takeoff, landings, actual jump operations, and all emergency procedures.

Cross-Country—Flights to or from other than home stations. This includes the outbound and return legs of a deployment.

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 maneuvers normally accomplished during normal daylight hours may be performed within this period.

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

Joker Fuel—A prebriefed fuel needed to terminate an event and transition the next mission phase.

Knots—Nautical miles per hour.

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.

Stereo Flight Plan—A precoordinated flight plan that the pilot may file without the use of the DD Form 175, *Military Flight Plan*. Stereo flight plans and filing procedures must be coordinated with the local base operations function and all air traffic control facilities involved.

Attachment 2

SINGLE-SHIP BRIEFING GUIDE

A2.1. Time Hack.

A2.2. Mission Data.

A2.2.1. Call sign and tail number.

A2.2.2. Flight authorization and aircraft commander (left/right seat).

A2.2.3. Mission objectives.

A2.2.4. Mission requirements.

A2.2.5. Station, start, takeoff, and landing times.

A2.2.6. Weather and status (takeoff, en route, drop zone, recovery, landing, alternates).

A2.2.7. Flight plans and passenger manifests.

A2.2.8. Fuel and oxygen requirements (joker and bingo).

A2.2.9. Notices to airmen review.

A2.2.10. Go/no-go (currencies, flight crew information files, and read files).

A2.2.11. Required publications.

A2.3. Ground Operations.

A2.3.1. Walkaround.

A2.3.2. Preflight duties (de-ice check, instrument cockpit check, automated terminal information service, clearance).

A2.3.3. Engine start.

A2.3.4. Airfield restrictions and taxi procedures (reverse taxi).

A2.3.5. Cargo security.

A2.3.6. Passenger loading and unloading and manifest changes.

A2.3.7. Ground delays and spare aircraft.

A2.4. Takeoff and Departure.

A2.4.1. Takeoff (runway, cables, barriers, flaps).

A2.4.2. Avionics.

A2.4.3. Departure (altitude, route, obstacles, Trouble T, standard instrument departure).

A2.5. En route Procedures.

A2.5.1. Opening flight plan flight service station.

A2.5.2. In-flight checks.

A2.5.3. Navigation and communications (routing, altitude and terrain avoidance).

A2.6. Arrival.

A2.6.1. Airfield description (active or available runways, cables, barriers).

A2.6.2. Instrument approach review.

A2.6.3. VFR pattern.

A2.6.4. Touch-and-go procedures.

A2.7. Inflight.

A2.7.1. Operating area (location, controlling agency, nearest divert airfields).

A2.7.2. Specific maneuvers (entry and parameters).

A2.7.3. Minimum altitudes.

A2.7.4. Communications.

A2.8. Drop Zone.

A2.8.1. Drop zone controlling agency (frequency, checking, clearance).

A2.8.2. Jumpmaster directions.

A2.8.3. WDI procedures.

A2.9. Emergency Procedures.

A2.9.1. Ground egress and passenger procedures.

A2.9.2. Aborts procedures.

A2.9.3. Takeoff emergencies and emergency return (VMC or IMC).

A2.9.4. Emergency and divert airfields.

A2.9.5. General aircraft malfunctions and crew coordination.

A2.9.6. Oxygen malfunctions and physiological incidents.

A2.9.7. Communications failures (interphone and radios).

A2.9.8. Jumpmaster emergencies (unintentional smoke, inadvertent parachute deployment).

A2.9.9. Simulated emergencies (planned emergency procedures, rules of engagement, and restrictions).

A2.10. Additional Items.

A2.10.1. Special interest items.

A2.10.2. Operational risk management (score, risks, mitigation, approval).

A2.10.3. Crew resource management.

A2.10.3.1. Crosswind controls (taxiing and landing).

A2.10.3.2. Instrument monitoring and required calls.

A2.10.4. Transfer of aircraft control.

A2.10.5. Clearing and areas of potential conflict.

A2.10.6. Communications (checklists, radio procedures).

A2.10.7. Wake turbulence and spacing.

A2.10.8. Weight and balance.

A2.10.9. Night procedures.

A2.10.10. Alternate mission.

A2.10.11. Debrief plan.

A2.10.12. Personal equipment (clothing, jewelry and scarves removed, etc.).

A2.10.13. Electronic devices (cell phones, pagers, etc.).

A2.10.14. Sign out and step.

A2.11. Questions.

A2.12. Passenger and Jumpmaster Briefings.

Attachment 3

FORMATION BRIEFING GUIDE

A3.1. Time Hack.

A3.2. Mission Data/Line-up Card.

A3.2.1. Call sign and tail number.

A3.2.2. Flight authorization and aircraft commander (left/right seat).

A3.2.3. Flight lead or deputy.

A3.2.4. Mission objectives.

A3.2.5. Mission requirements.

A3.2.6. Step, start, takeoff, and landing times.

A3.2.7. Weather and status (takeoff, en route, drop zone, recovery, landing, alternates).

A3.2.8. Flight plans and passenger manifests.

A3.2.9. Fuel and oxygen requirements (joker and bingo).

A3.2.10. Notice to airmen review.

A3.2.11. Go/no-go (currencies, flight crew information files, and read files).

A3.2.12. Required publications.

A3.3. Ground Operations.

A3.3.1. Check-in (automated terminal information service, clearance, frequency).

A3.3.2. Engine start (cart).

A3.3.3. Airfield restrictions and taxi procedures (taxi interval).

A3.3.4. Cargo security.

A3.3.5. Passenger loading and unloading and manifest changes.

A3.3.6. Engine runups.

A3.3.7. Communications setup (COM 1, 2, 3).

A3.3.8. Ground delays and spare aircraft.

A3.4. Takeoff and Departure.

A3.4.1. Takeoff (runway, cables, barriers, flaps).

A3.4.2. Lineup/interval (3-ship or 2-ship).

A3.4.3. Departure (altitude, route, obstacles, Trouble T, standard instrument departure).

A3.4.4. Rejoins after takeoff (airspeed).

A3.5. En Route Procedures.

A3.5.1. Opening flight plan (flight service station).

A3.5.2. In-flight checks.

A3.5.3. Navigation and communications (routing, altitude, and terrain avoidance).

A3.6. Arrival.

A3.6.1. Airfield description (active or available runways, cables, barriers).

A3.6.2. Recovery (routing, altitudes, and airspeeds).

A3.6.3. Flight splitup (planned or weather).

A3.6.4. Patterns and landings (entry, spacing, turns, configurations, landing roll).

A3.6.5. After landing (check-in, taxi back).

A3.7. Inflight.

A3.7.1. Operating area (location, controlling agency, nearest divert airfields).

A3.7.2. Specific maneuvers (entry and parameters).

A3.7.2.1. Formation confidence maneuvering.

A3.7.2.2. Pitchouts and rejoins (airspeeds and bank angles).

A3.7.2.3. Overshoot.

A3.7.2.4. Practice lost wingman.

A3.7.3. Collision avoidance/breakout.

A3.7.4. Lost sight.

A3.7.5. Visual signals.

A3.7.6. Wake turbulence.

A3.7.7. Position changes.

A3.7.8. Minimum altitudes.

A3.7.9. Communications (interplane, pilot flying, and PNF).

A3.8. Drop Zone.

A3.8.1. Drop zone controlling agency (frequency, checking, clearance).

A3.8.2. Jumpmaster directions.

A3.8.3. WDI procedures.

A3.8.4. Jump position.

A3.8.5. Radio calls (bell, green light, red light).

A3.8.6. Negative drops.

A3.9. Emergency Procedures.

A3.9.1. Ground egress and passenger procedures.

A3.9.2. Aborts procedures.

A3.9.3. Takeoff emergencies and emergency return (VMC or IMC).

A3.9.4. Emergency and divert airfields.

A3.9.5. Formation positions and mutual support.

A3.9.6. Knock-it-off procedures.

A3.9.7. Communications failures (interphone and radios).

A3.9.8. Mid air collision (altitude, separation/controllability check/chase ship).

A3.9.9. Lost wingman procedures.

A3.9.10. Jumpmaster emergencies (unintentional smoke, inadvertent parachute deployment).

A3.10. Additional Items.

A3.10.1. Special interest items.

A3.10.2. Operational risk management (score, risks, mitigation, approval).

A3.10.3. Crew resource management.

A3.10.4. Clearing and areas of potential conflict.

A3.10.5. Communications (checklists, radio procedures).

A3.10.6. Wake turbulence and spacing.

A3.10.7. Alternate or single-ship missions (fallout plan).

A3.10.8. Debrief plan.

A3.10.9. Personal equipment (clothing, jewelry, and scarves removed, etc.).

A3.10.10. Electronic devices (cell phones, pagers, etc.).

A3.10.11. Sign out and step.

A3.11. Questions.

A3.12. Individual Crew Briefings.