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Flying Operations

U-28 OPERATIONS PROCEDURES

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This publication implements *Air Force Policy Directive (AFPD) 11-2, Aircrew Operations*, and *Air Force Manual (AFMAN) 11-202, Volume 3, Flight Operations*, establishing procedures for the operation of U-28 aircraft (some variants known as PC-12 in some regulations until name standardization is completed) to accomplish their worldwide operational and training missions. It provides the most acceptable guidance and procedures for most circumstances but does not replace sound judgment. This manual applies to all uniformed members of the Regular Air Force and the Air Force Reserve. This manual does not apply to the Air National Guard or to the United States Space Force. Refer changes and questions about this publication to the Office of Primary Responsibility using the DAF Form 847, Recommendation for Change of Publication; route DAF Forms 847 through Standardization and Evaluation channels to Air Force Special Operations Command (AFSOC) /A3V. 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 (IAW) 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 DAF Form 847, Recommendation for Change of Publication; route DAF Forms 847 from the field through the appropriate functional chain of command. The authorities to waive wing or 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 Manual (DAFMAN) 90-161, *Publishing Processes and Procedures*, Table A10.1 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. See **paragraph 1.4** for additional waiver request procedures. 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 updated to reflect current aviation guidance and should be reviewed in its entirety. Where possible, rules and regulations contained in source publications have been removed. Substantial changes include updates to U-28 Electronic Flight Book (EFB) guidance, changes to Emergency Safe Altitude (ESA) and Minimum Safe Altitude (MSA) language, updated, updated Night Vision Goggle (NVG) requirements for local training sorties, removes requirement for OGVs to maintain list of pre-approved airfields, updated required actions regarding Enhanced Ground Proximity Warning System **(**EGPWS) warnings, and clarified types of Global Positioning System (GPS) approaches U-28A aircrews are authorized to conduct.

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Chapter 1

DIRECTIVE GUIDANCE

1.1. General. This volume provides guidelines and restrictions for all variants of U-28 aircraft (e.g., Trainer, EQ, EQ+). It is a compilation of information from aircraft flight manuals, Flight Information Publications (FLIP) and other Air Force directives and is an original source document for many areas. If conflicting guidance is given in U-28 Tactics Manuals or Handbooks, this volume takes precedence. It is written for normal and contingency operations to reduce procedural changes at the onset of contingencies. All U-28 operations shall be conducted in accordance with (IAW) US domestic law and international law, to include the law of armed conflict. **(T-0).** Training procedures are included.

1.2. Applicability. This AFMAN applies to all aircrew members, support personnel, and contractors involved with employing the U-28. References to units, personnel, and aircraft in this manual include all gained forces unless specifically exempted by this manual.

1.3. Aircrew Responsibility. This volume, in conjunction with other governing directives, prescribes operating procedures for the U-28 under most circumstances. It is not to be used as a substitute for sound judgment or common sense. Operations or procedures not specifically addressed or prohibited may be accomplished if they safely enhance mission accomplishment.

1.3.1. "Must," "Will," and "Shall" indicate a mandatory requirement.

1.3.2. "Should" indicates a recommended procedure.

1.3.3. "May" indicates an acceptable or suggested means of accomplishment.

1.3.4. ***"WARNING"*** indicates operating procedures, techniques, etc., which will result in personal injury or loss of life if not carefully followed.

1.3.5. ***"CAUTION"*** indicates operating procedures, techniques, etc., which will result in damage to equipment if not carefully followed.

1.3.6. **"Note"** indicates operating procedures, techniques, etc., which are essential to emphasize.

1.3.7. See **Attachment 1**, Glossary of References and Supporting Information for additional terms, definitions, and references.

1.4. Deviations and Waivers. Do not deviate from the guidance in this manual, except when the situation demands immediate action to ensure safety. Report deviations, without waiver, through channels to AFSOC Operations (AFSOC/A3) within 24 hours, followed by a written report.

1.4.1. Although this publication provides guidance for aircraft operations under most circumstances, it is not a substitute for sound judgment. When it is necessary to protect the crew and aircraft from a situation not covered by this manual and immediate action is required, the Pilot in Command (PIC) has ultimate authority and responsibility for the course of action to be taken. All deviations or exceptions to this manual without a waiver will be reported through appropriate channels to AFSOC/A3. **(T-2).**

1.4.2. Unless otherwise indicated, AFSOC/A3 is the waiver authority for operational procedure requirements contained in this manual. AFSOC/A3 may delegate this authority to

the Commander Air Force Special Operations Forces (COMAFSOF) for operationally assigned Special Operations Forces. Request waivers to this manual through appropriate command and control channels.

1.5. Distribution.

1.5.1. U-28 Unit Commander (CC), All Levels – 1.

1.5.2. Operational File (Ops Section), All Levels – 1.

1.5.3. Flight Crew Information File (FCIF) – 1.

1.5.4. Staff Operations Officers, All Levels – 1.

1.5.5. Mission Kits – 1. 9

1.5.6. Aircrew – 1.

1.6. Supplements. Supplements will not duplicate or be less restrictive than the provisions of this manual or any other publication without prior authorization from the appropriate Major Command (MAJCOM). File supplements according to DAFMAN 90-161. **Note:** AFR units will send unit supplements to AFRC/A3J who will then forward to AFSOC/A3V.

1.6.1. Units may supplement this manual. The purpose of the unit supplement is to document the process by which units implement the requirements of this manual.

1.6.2. Local Procedures Coordination Process. Units will send one copy of **Chapter 10** (Local Procedures) supplements to AFSOC/A3V for validation. **(T-2).**

1.7. Development of New Equipment and Procedures. Units are encouraged to suggest new equipment, methods, tactics, and procedures. Coordinate these requirements through the MAJCOM.

Chapter 2

ROLES AND RESPONSIBILITIES

2.1. General. The MAJCOM command and control (C2) system is based on the principles of centralized monitoring and decentralized command and control and execution. The result is a C2 mechanism which keeps the MAJCOM/CC informed of the current status of forces while enabling the Wing, Group, or Squadron Commander to exercise control over the day-to-day operations.

2.1.1. Waiver request will be the responsibility of the C2 agency with the operational control of the mission. **(T-2).** All waivers will be coordinated through Stan/Eval channels. **(T-2).**

2.2. MAJCOM & Operational Control (OPCON) Authority. Absent an approved command relationship to the contrary, AFSOC is designated as the controlling agency for United States Special Operations Command (USSOCOM)-assigned Air Force Special Operations Forces (SOF) aircraft, while Theater Special Operations Commands have Operational Control (OPCON) of theater-based assets. In practice, responsibility for planning and executing AFSOC missions is routinely delegated to the Wing or Group Commander. The Wing or Group Commander, in turn, exercises control of non-close- hold missions through the command post supporting the wing or group. In the event that assigned forces undergo a Change of Operational Control, responsibility for mission monitoring passes from the wing or group C2 facility to the gaining command. Changeover will be accomplished IAW the pertinent Operational Plan, Operational Order, or deployment or execution order.

2.3. Commander Air Force Special Operations Forces (COMAFSOF). The Commander, USSOCOM or TSOC may designate a COMAFSOF. This should be done in writing, and the designation letter will include the individual by name and the geographic area of authority. In the absence of a designated COMAFSOF, the AFSOC/A3 may grant COMAFSOF waiver authority in writing to the senior Air Force SOF rated officer within the specific area of responsibility. The designation letter should be updated to reflect any personnel changes as a result of prolonged deployments. **(T-2).** This waiver authority is valid for any items in AFMAN 11-2MC-130J, Volume 3, requiring COMAFSOF waiver. **(T-2).** When waiver authority is delegated, AFSOC/A3V will receive a copy of all approved waivers. **(T-2).**

2.4. Operations Center. The AFSOC Operations Center monitors all off-station AFSOC aircraft via Theater Battle Management Core Systems – Execution Status and Monitoring, the Global Decision Support System (GDSS2), Theater Situation Reports, and aircrew Deployed Status Reports (DSR). Operations Centers will track all assigned aircraft equipped with Blue Force Tracker (BFT) over approved SIPR Common Operating Picture (COP) tools. BFT capability will be used throughout execution of mission, to ensure aircraft are tracked near-real time to provide Situational Awareness to C2, via the COP. Inputs to these various tracking tools are provided by the C2 agency with OPCON.

2.4.1. PIC or mission commander flight reporting duties to the Operations Center.

2.4.1.1. Information on Outside Continental United States (OCONUS) or theater-based movements of AFSOC aircraft comes to the AFSOC Operations Center via ESTAT or telephone notification from the overseas host unit command post. The host unit command post receives their data from the aircrews directly or via the Special Operations Command and Control Squadron or Element.

2.4.1.2. Unclassified Missions at Bases with an Air Mobility Command (AMC) C2 Facility. Aircraft Commander or Mission Commander (AC/MC) will follow local procedures for reporting departures and report any changes to mission profile that effects mission execution. **(T-2).** AC/MC will submit ops summaries (OPSUMS) via Electronic Flight Book (EFB) AFSOC DOCs Application to the maximum extent possible. **(T-2).** If unable to submit via EFB due to classification/connectivity they will provide required information to primary C2 node. **(T- 2).** OPSUMS should be submitted within 1 hour of mission completion.

2.4.1.3. Unclassified Missions at Bases without an AMC C2 Facility. Refer to current Air Operations Directive published by AFSOC/A3 for most current C2 procedures if different.

2.4.1.4. Close-hold or Sensitive Missions. These missions may operate without Airlift Implementation and Monitoring System setups.

2.4.1.5. Regional Reporting Agencies. CONUS Special Operations Wing (SOW) and below taskings: Wing Command Center. Above wing level taskings: AFSOC Operations Center. OCONUS and Deployed taskings: COMAFSOF with coordination through AFSOC Operations Center.

2.5. Mission Commander. A Mission Commander will be designated when more than one aircraft or crew is deployed away from home station for training, exercise, or other operations. **(T-3).** The Mission Commander will be a rated officer. **(T-3).** The Mission Commander may be a primary crew member for exercises when the unit commander so designates. Mission Commander duties include, but are not limited to:

2.5.1. Briefing crews on local operating procedures.

2.5.2. Coordinating with Air Traffic Control (ATC), Combat Control Teams, Special Tactics Teams, range control, users, and other agencies that may have an impact on the mission.

2.5.3. Ensuring Forward Area Refueling (FARP) sites or Landing Zones (LZ) have current surveys (when necessary).

2.5.4. Ensuring personnel have ample and adequate billeting, eating, and transportation arrangements.

2.5.5. Ensuring maintenance personnel know of aircraft and fuel requirements.

2.5.6. Submitting timely reports on aircraft movements.

2.6. Pilot in Command Responsibility and Authority. AF Form 4327A, *Crew Flight Authorization,* designates a PIC for all flights. The PIC is:

2.6.1. In command of all persons aboard the aircraft.

2.6.2. Responsible for the welfare of their crew, mission essential personnel (MEP), passengers, and the safe accomplishment of the mission.

2.6.3. Vested with the authority necessary to manage the crew and accomplish the mission.

2.6.4. The final mission authority and makes decisions not specifically assigned to a higher authority.

2.6.5. The final authority for accepting a waiver affecting the crew or mission.

2.6.6. Charged with keeping the applicable commander informed of mission progress and difficulties.

2.6.7. Responsible for the timely reporting of aircraft movements in the absence of a MC.

2.7. Mission Clearance Decision. The final decision to delay a mission may be made either by the agency with OPCON or the PIC when, in the opinion of either, conditions are not safe to start or continue a mission. Final responsibility for the safe conduct of the mission rests with the PIC. If the PIC refuses a mission, it will not depart until the conditions have been corrected or improved so that the mission can operate safely. **(T-2).** Another PIC and aircrew will not be alerted to take the same mission under the same conditions. **(T-2).**

2.7.1. Diverting or rerouting a mission must be authorized by the commander with OPCON except in an emergency or when required by enroute or terminal weather conditions or facilities. In the event of an emergency or weather-related divert or reroute, the MC or PIC must notify the controlling authority as soon as possible. **(T-3).**

2.7.2. The controlling agency directing the diversion or rerouting is responsible for ensuring destination requirements or facilities are adequate for the aircraft and aircrew.

2.7.3. The PIC will notify the controlling agency of any aircraft or aircrew limitations that may preclude diverting or rerouting the mission. **(T-3).**

2.7.4. When directing an aircraft to an alternate airfield, the controlling agency will ensure the PIC is provided existing and forecast weather for the alternate. If the planned alternate is unsuitable upon arrival at destination, the controlling agency will advise the PIC of other suitable alternates.

Chapter 3

AIRCREW COMPLEMENT AND MANAGEMENT

3.1. Aircrew Qualification. Each person assigned as a primary crew member must be qualified or in training for qualification in that crew position, mission, and aircraft. **(T-2).**

3.1.1. In addition to all basic events, basic proficiency crew members, Basic ACs (BACs), and Basic IPs (BIPS) may perform (and instruct) NVG takeoff/landing, tactical arrival/departure, and any events in the Special Mission Events table of AFMAN 11-2U-28V1, *U-28 Aircrew Training,* and RTM provided they are certified and current in those events.

3.1.2. Basic proficiency crew members may perform primary crew duties on any non-mission sortie and on mission sorties (including unilateral training, joint training, and exercises) when receiving mission qualification training or evaluations under the supervision of a qualified instructor or flight examiner in their respective crew position.

3.1.3. Mission capable crew members may perform primary crew duties on any unilateral training mission. For other missions, the unit commander must determine the readiness of each mission capable crew member to perform primary duties. **(T-3).**

3.1.4. Noncurrent or unqualified crew members (per AFMAN 11-2U-28V1 and RTM) may only perform duties in their primary crew position on training or evaluation missions when under the direct supervision of a qualified instructor or flight examiner in their respective crew position or within Cross Crew Position Training as regulated in AFMAN 11-202V1, *Aircrew Training*, and AFMAN 11-2U- 28V1. **(T-3).**

3.2. Crew Complement. The crew complement for operations is specified in **Table 3.1** The Operations Group (OG) Commander (OG/CC) or COMAFSOF is the waiver authority for aircrew complements less than specified in **Table 3.1**.

Table 3.1. Crew Complement.

Mission	Pilot(s)	CSO	Notes
Engine Ground Run/Taxi/Towing	1	Not Required	1, 2
Qualification and Instrument	2	Not Required	
Mission	2	As Required	

Notes:

Towing operations and engine ground runs may be conducted by certified maintenance nnel without a pilot.

Mixed aircrew and maintenance personnel engine runs will be conducted IAW **s**

3.2.1. Other US Military Service Members Performing Duties on Air Force Aircraft. Reference DAFMAN 11-401, AFSOC Sup, *Aviation Management*.

3.2.2. Logging of Flying Time. Log flying time IAW DAFMAN 11-401, AFSOC Sup. CSOs flying on U-28 Trainer aircraft can log “Other” time under the “XN” crew code.

3.3. Interfly. Normally, interfly should be limited to specific operations/tests, exercises, or special circumstances.

3.3.1. AFSOC/A4RX maintains current Memoranda of Agreements (MOA) between AFSOC, AFR, Air Force Materiel Command (AFMC), Air Education and Training Command (AETC), and Air Combat Command (ACC) for interfly using AFSOC-assigned aircraft. Unless specified in the MOA:

3.3.1.1. Aircraft ownership will not be transferred. **(T-2).**

3.3.1.2. The operational or training squadron will prepare and sign AFSOC/AFRC flight orders for flights on which the "A" code is from their squadron. **(T-2).**

3.3.1.3. As a minimum, aircrews will be qualified in the U-28 Trainer, as well as systems or configuration required to fly the aircraft and/or mission. **(T-2).** If noncurrent, comply with Paragraphs **3.1.3 and 3.1.4**.

3.3.1.4. Crew member(s) will follow operational procedures defined in this manual and the U-28 Aircrew Operating Handbook (AOH). **(T-2).**

3.3.1.5. AFSOC will retain all flight and ground mishap reporting responsibility. **(T-2).**

3.3.2. Waiver Authority.

3.3.2.1. With a valid MOA. OG/CC or COMAFSOF is the approval authority for interfly on AFSOC aircraft under their control. **(T-3).**

3.3.2.2. No MOA/Expired MOA. AFSOC/A3 is the approval authority for interfly on AFSOC aircraft. **(T-2).**

3.3.2.3. Contingency operations must be approved by both AFSOC/A3 and respective MAJCOM/A3. **(T-2).**

3.3.2.4. Aircrew members assigned to the USAF Weapons School (USAFWS) are authorized to participate in orientation flights in AFSOC aircraft operated by crews from 14th Weapons Squadron and are authorized to occupy duty positions (only under instructor supervision if not current or qualified in the MDS). **(T-2).**

3.4. Intrafly. The OG/CC or COMAFSOF is the approval authority for intrafly of AFSOC crew members on U-28 aircraft under their control. **(T-3).**

3.4.1. In all cases, the aircrew must be current and qualified in the aircraft, systems, configuration, and mission being flown. **(T-2).** If noncurrent, comply with Paragraphs **3.1.3** and **3.1.4**.

3.5. Scheduling Restrictions. In addition to the restrictions in AFMAN 11-202V3 AFSOC *Supplement, General Flight Rules*, do not schedule crew members to fly or perform crew duties:

3.5.1. Within 24 hours after crewmember being administered anesthetics for dental or surgical procedures. Local flight surgeons will recommend scheduling restrictions following all medical issues where provider assistance is sought, (see DD Form 2992, *Medical Recommendation for Flying and Special Duties*). **(T-2).** When mission requirements dictate, flight surgeons may authorize shorter periods not less than 8 hours.

3.6. Flight Duty Periods (FDP). The U-28 is considered a "Transport" aircraft for FDP calculations. Aircrews may recover to a basing location with a non-tactical recovery, to include the use of NVGs after the PIC has extended the FDP.

3.7. Crew Rest. In addition to the restrictions in AFMAN 11-202V3 AFSOC Sup, it is permissible for crew members not previously placed in crew rest to fly if they consent and have met the crew rest requirements during unusual circumstances and when approved by the squadron commander (SQ/CC) or director operations (SQ/DO). **(T-3).**

3.8. Standby Duty. A period of time during which a crew may be required to launch on an anticipated mission for which a firm departure time cannot be established.

3.8.1. Standby duty and FDP begin at show time and ends at the expiration of the FDP.

3.8.2. Crews will receive AFMAN 11-202V3 required crew rest prior to assuming standby duty. **(T-3).** A standby duty period will not exceed the crew's FDP. **(T-3).** Aircrew not dispatched on a mission during standby duty will be re-entered into crew rest prior to assuming subsequent flying or standby duty. **(T-3).**

3.8.3. Crews will show at the beginning of the standby period to receive mission briefings and prep equipment for flight. **(T-3).** Crews will remain in vicinity of the mission workspaces or as required to meet response times. **(T-3).** Any activities that require a member to depart the defined areas must be approved by the aircraft commander. **(T-3).** A duty crew may be used to pre-flight the alert aircraft and prepare mission products. Squadron Command (SQ/CC) or Director of Operations (DO) may authorize release from standby duty prior to the end FDP.

3.9. Alert Duty. Reference AFMAN 11-202V3 AFSOC Sup, for alert FDP guidance.

3.9.1. Give alert aircrews a general briefing at the beginning of each alert period. Update the briefing every 24 hours to include weather, local Notice to Airmen, latest FCIF information, special instructions, and any other appropriate items. **(T-3).**

3.9.2. Alert aircrews will prepare a weight and balance for the alert aircraft and prepare Takeoff and Landing Data (TOLD) using the worst weather conditions expected during the alert period. **(T-3).** Use this data only for alert scrambles. If the alert aircraft is flown for other reasons, compute data for that flight using existing weather conditions. **(T-3).**

3.9.3. When an alert crew change occurs and the same aircraft remains on alert, the oncoming alert crew should complete a face-to-face turnover and review the aircraft forms for the aircraft. If unable to accomplish a face-to-face turnover, accomplish a preflight. **(T-3).**

3.10. Crew Notification and Show Times. SQ/CC or DO should set a response time for both notification-to-show and notification-to-launch. Notification-to-show response time will be no less than 15 minutes. **(T-3).** Provide a minimum of 45 minutes from arrival at aircraft until launch for crew members to complete preflight duties, unless preflight duties have been accomplished.

Chapter 4

AIRCRAFT OPERATING GUIDELINES

4.1. Required Equipment. A Full Mission Capable (FMC) aircraft is the ultimate objective of the logistics effort. The Minimum Essential Subsystem List (MESL) governs mission systems requirements and informs the mission capable status of each aircraft for the squadron/mission commander and maintenance, but does not necessarily prevent individual sorties if covered equipment is inoperative. The final responsibility regarding mission equipment required for a sortie rests with the PIC. If one crew accepts an aircraft to operate a mission or mission segment without an item or system, this acceptance does not commit that crew, or a different crew, to accept subsequent operations with the same item or system inoperative. When the PIC considers an item essential, designate the component Mission Essential on the aircraft maintenance forms, and the item will be repaired or replaced prior to departure. **(T-3).**

4.1.1. The Minimum Equipment List (MEL) governs basic aircraft systems required for flight, and does prevent flight if any basic aircraft systems are inoperative and either are not in the MEL or are not provided a caveat for degraded operation in the MEL. The PIC is the approval authority for operations with degraded equipment within the guidelines of the aircraft MEL.

4.1.1.1. For contingency operations, when communication issues prevent any possibility of a waiver request, the PIC is the approval authority for operating outside the MEL but must notify the chain of command of the situation as soon as conditions permit. **(T-3).**

4.1.1.2. If any degradation of on-board systems are discovered which could result in loss of situational awareness during flight, the PIC will inform the crew. **(T-3).** The decision to proceed with the planned flight profile rests with the PIC.

4.1.2. One-Time Flights. An aircraft may be released for a one-time flight with a condition that might be hazardous for continued use provided the aircraft is airworthy for one flight to another station. A one-time flight is defined as a required flight to a final destination including required fuel stops.

4.1.2.1. The SQ/CC (or deployed MC) and chief of maintenance (or deployed maintenance representative) must authorize this release. **(T-3).**

4.1.2.2. The OG/CC or COMAFSOF must authorize the flight after maintenance has released the aircraft for flight operations. **(T-3).**

4.1.2.3. The maintenance release, OG/CC or COMAFSOF approval, and the PIC's concurrence are all required before the aircraft can be flown to the specified repair destination. **(T-3)**.

4.2. Degraded Equipment. If the PIC elects to operate with degraded equipment or aircraft systems, the PIC will coordinate mission requirements (i.e., revised departure times, fuel requirements, maintenance requirements, etc.) prior to flight with the mission control agency to ensure the decision does not adversely impact follow-on missions. **(T-3).**

4.2.1. If a landing gear, hydraulic system, or flap malfunction is encountered or when aircraft configuration cannot be changed, only a full stop landing will be made. **(T-3).** The discrepancy will be corrected prior to the next flight. **(T-3). Exception:** If repair capability does not exist and a positive determination is made that further flight can be accomplished with

the gear down and locked or the flaps left in place, the aircraft may be flown to a destination where repair capability exists provided the gear or flaps are not moved.

4.2.2. The PF will have primary flight information (EADI and EHSI) displayed at all times with flights conducted in IMC and/or with no discernable horizon. **(T-3).** During critical phases of flight, PNF will have primary flight information displayed as well ensuring adherence to flight clearances and procedures. **(T-3).**

4.3. MEL. The MEL does not include specific flight and radio/navigation equipment required by any particular country's operating regulations. The PIC is responsible for assuring compliance with current operating regulations for each intended flight. U-28 aircraft have been heavily modified and are not subject to the FAA-published Master Minimum Equipment List (MMEL); use the AFSOC published MEL.

Chapter 5

AIRLAND OPERATION REQUIREMENTS

5.1. Aircraft Maximum Operating Weight. In-flight operations above 10,450 pounds during training must be approved by the SQ/CC or SQ/DO. **(T-3).** Operations above 10,935 pounds require AFSOC/A3 approval. **(T-2).**

5.2. Checklists. Accomplish all checklists with strict discipline. A checklist is not complete until all items have been accomplished.

5.2.1. Each aircrew member will use the AFSOC/A3V approved checklist for their duty position when conducting ground or flight operations. **(T-2).**

5.2.2. Aircrews may use approved checklists modified with notes, amplifying procedures, and limits provided the checklists and notes are current. Currency of notes is the crew member's responsibility.

5.2.3. Before Landing Checklists. Aircrew will complete the Before Landing Checklist no lower than 100 feet Above Ground Level (AGL). (**T-2).** Aircraft will be established on final, wings level, with a controlled rate of descent in a position to execute a safe landing no lower than 100 feet AGL. **(T-2)**

5.3. Duty Station. All crew members will be at their duty stations during all takeoffs departures, approaches, and landings. **(T-3).** During other phases of flight, crew members may leave their duty stations to meet physiological needs and perform normal crew duties. Only one pilot may be absent from their duty station at a time. Notify the crew prior to going off intercom.

5.3.1. A qualified pilot will be at a set of flight controls while the engine is running and during all phases of flight. **(T-3).** Pilot seat swaps may be accomplished only with a qualified pilot at the flight controls. In-flight seat swaps will be accomplished at/or above 1,000 feet AGL. **(T-3).**

5.3.2. The PIC will have access to a set of controls during all takeoffs and landings. **(T-2).**

5.3.3. The PIC will land the aircraft during aircraft emergencies, unless conditions prevent compliance, and during missions with a Distinguished Visitor (DV) 4 or higher on board the aircraft. **(T-3).**

5.3.4. Copilots will occupy the right seat until being considered for an upgrade program. **(T-2).** A current and qualified Instructor Pilot (IP) or IP trainee may takeoff and land from either seat under any condition.

5.4. Seat Belts and Cabin Occupants.

5.4.1. All crew members will have a designated seat and restraint available. **(T-3).** Crew members occupying a primary duty position will have lap belts fastened at all times. **(T-3).** Shoulder harness and lap belts will be fastened during the following phases: taxi, takeoff, landing, final approach fix (FAF), and when the aircraft is on the runway. **(T-3). Exception:** Crew members performing specific duties may be away from their seat without restraints fastened (to include taxing) with permission of PIC.

5.4.2. Provide a safety belt for all occupants. Occupants will fasten seat belts securely when directed by the PIC, turbulence is encountered or anticipated, or in areas of forecast clear air turbulence. **(T-3).**

5.4.3. Floor loading is authorized to support contingencies, exercises, or training. The aircrew will attach a tie down strap for each row of personnel to provide forward restraint and body stability. **(T-3).**

5.4.3.1. Alternate restraints will be secured prior to takeoff and will not be removed until after landing unless required to meet physiological needs or perform mission related duties. **(T-3).**

5.4.3.2. Accomplish troop security by one of the following methods in descending order of preference:

5.4.3.2.1. Seatbelts or snap links attached to tie-down rings on the cabin floor.

5.4.3.2.2. Five thousand (5,000) pound tie-down straps.

5.4.4. All cabin passengers must be seated with seat belts fastened during taxi, takeoff, approach, and landing. **(T-3).**

5.4.5. Passengers**.** DoD 4515.13-R, *Air Transportation Eligibility*, establishes criteria for passenger movement on DoD aircraft. DAFMAN 11-401 AFSOC Sup, provides further guidance on orientation and public affairs travel. Refer to these publications directly. In all cases, passengers will be manifested on DD Form 2131, *Passenger Manifest.* **(T-2).**

5.4.5.1. During spouse orientation flights comply with DAFMAN 11-401, and all supplements. Additionally threat reaction maneuvers are prohibited and spouses will not fly on the same aircraft. **(T-2).**

5.4.5.2. For other orientation categories, passengers will be seated with seatbelts fastened during threat maneuvers. **(T-2).**

5.4.5.3. Space-required. DoD 4515.13-R lists several categories of passengers who are authorized official travel on DoD aircraft. When flying space-required personnel, both pilots must be fully qualified (unless specified otherwise by DAFMAN 11-401). **(T-3).** Simulated emergency procedures (EP) are prohibited. There are no restrictions on mission events. Passengers will be seated and secured during threat maneuvers. **(T-2).** The PIC will ensure supported forces are briefed on the mission profile and events before flight. **(T-2).** Apply the space-available processing, approval, and restrictions to all space-required categories with the following exceptions:

5.4.5.3.1. Supported Forces. A subcategory of space-required passengers defined by this manual U.S. and foreign military personnel who are an integral part of the mission being performed. Approval is assumed by the mission tasking. Manifest on DD Form 2131.

5.4.5.3.2. Mission Essential Personnel. A sub-category of space-required passenger defined by DAFMAN 11-401, AFSOC Sup and this manual. Off-station travel is documented by travel orders. A letter of authorization from the group commander or COMAFSOF will document local flights. **(T-3).** Deployed squadron or mission commanders may approve squadron-assigned personnel, or maintenance personnel

required for mission accomplishment. The 18 Flight Test SQ/CC is the approval authority for supporting forces in conjunction with test missions. When frequent local flights are necessary, commanders may issue annual authorizations by name or Air Force Specialty Code (AFSC), as appropriate. When using this option, the PIC will ensure that all restrictions are complied with for each individual mission. **(T-3).**

5.5. Aircraft Lighting. Operate aircraft lighting IAW AFMAN 11-202V3 AFSOC Sup and AFMAN 11-218, *Aircraft Operations and Movement on the Ground*, except when in compliance with contingency requirements or guidance.

5.5.1. If infrared (IR) covers are installed on any of the external aircraft lighting systems, the covert systems' redundant overt lighting (e.g., strobe/anti-collision and landing/recognition) must be operable prior to takeoff. **(T-3).**

5.6. Communications. The aircrew will determine communication requirements during mission planning. **(T-3).** Ensure all mission frequencies, cryptological data, mission radio configuration, and mission radio monitoring responsibilities are outlined during the preflight briefing.

5.6.1. Secure Radio Usage. If a planner or crew discovers that the communication plan includes non-secure radios, every effort should be made to get a secure communications plan. Crews will ensure OPSEC is observed if required to conduct mission specific information over non-secure radios. **(T-3).**

5.7. Runway and Taxiway Requirements. Use normal takeoff and landing procedures whenever practical. For mission accomplishment, if approach end overruns are available and stressed or authorized for normal operations, the overruns may be used to increase the runway available for takeoff. Base all aircraft performance requirements on actual or predicted environmental conditions (e.g., pressure altitude, temperature, aircraft weight, runway surface conditions, etc.). See AFMAN 11-202V3 for more details on terms associated with declared distances. ***WARNING:*** Aircraft performance is based upon rotating and climbing on criteria outlined in the AOH. Failure to maintain aircraft performance criteria may not allow for safe clearance of obstacles.

5.7.1. Taxiway width. Minimum width for all operations is 23 feet. **(T-2).**

5.7.2. Runway width. Minimum width for all operations is 30 feet. **(T-2).**

5.7.3. Takeoff and Landing Obstruction Clearance Criteria. For a LZ to be suitable for operations, it must meet the U-28 or PC-12 criteria in DAFMAN 13-217. **(T-2).** The Approach– Departure Clearance Surface (ADCS) is 12:1.

5.7.4. Takeoff. Minimum runway length for takeoff is Accelerate-Stop Distance corrected for environmental conditions and flap setting. Both the actual runway length and the declared Accelerate-Stop Distance Available (ASDA) must be greater than or equal to the computed Accelerate-Stop Distance. The declared Take-off Runway Available (TORA) must be greater than the computed Takeoff Ground Roll. **(T-2).**

5.7.5. Landing**.** Both the actual runway length and the declared Landing Distance Available (LDA) must be greater than the computed Landing Ground Roll, corrected for environmental conditions. **(T-2).**

5.7.6. NVG Takeoff and Landing. NVG takeoff and landings may only be performed by NVG certified pilots. Both pilots must be certified and current unless an IP is at a set of controls conducting training for certification or currency. **(T-2).**

5.7.7. A special tactics controller, Landing Zone Safety Officer (LZSO), Landing Zone Controller (LZC), or an active control tower is required to conduct NVG landings at unlit or covertly marked LZs or airfields. **(T-3).**

5.7.8. Prepared unpaved/semi-prepared surfaces. The U-28 is constructed and approved for operations from prepared unpaved surfaces, defined in the AOH as "taxi-ways and runways that are prepared and approved for aircraft operations with a surface other than tarmac or concrete." This includes each LZ type defined in DAFMAN 13-217 provided the LZ has a LZ Survey. Airfields must be either listed in FLIP products or have an approved LZ Survey. If listed in AMC airfield suitability and restrictions report, the intended landing surface must have favorable listing for similar type aircraft. **(T-3).**

5.7.8.1. Certification and proficiency training is authorized at home-station. A list of training fields will be maintained by the SQ/CC and published in **Chapter 10**. The SQ/CC or SQ/DO may approve other fields as requested by MACs or MCs. **(T-3).** OCONUS operations may be authorized by the COMAFSOF and a suitable Semi-Prepared Airfield Condition Index (SPACI) must be completed prior to operations. **(T-3).**

5.7.8.2. Pilots will only perform stop-and-go or full stop landings on semi-prepared surfaces. **(T-3).**

5.7.8.3. Unless otherwise stated, all approved LZ surfaces, when dry, should correspond to RCR 20 when using prepared unpaved performance charts.

5.7.8.4. In any situation other than dry, an RCR assessment must be conducted and reported by a certified LZSO/LZC. Any RCR reading below 20 will correspond to the RCR 16 charts, any reading below RCR 16 will render the LZ unfit for use by U-28s. **(T-2).**

5.8. Aircraft Rescue and Fire Fighting (ARFF) Requirements. ARFF requirements at non-USAF active or flying installations are as follows:

5.8.1. During contingency LZ usage, up to eight takeoffs and landings within four consecutive days may be accomplished at a LZ or airfield without ARFF equipment or local established procedures in the event of an aircraft incident or accident. The OG/CC or COMAFSOF is the waiver authority for operations beyond this limit.

5.8.2. Refer to AFPAM 32-2004, *Aircraft Fire Protection for Exercises and Contingency Response Operations*, to calculate ARFF requirements. Non-USAF ARFF vehicles may be used if the agent and pumping capabilities are equivalent.

5.8.3. Waivers to the ARFF requirements will be considered on a case-by-case basis. Required information for waiver request can be found in AFPAM 32-2004.

5.8.4. SQ/CCs may authorize training operations at LZs and airfields that do not possess local ARFF services.

5.9. Landing Zones.

5.9.1. It is the responsibility of all aircrew and/or ground personnel to notify the Point of Contact for the unit LZ survey program, in a timely manner, of any changes or discrepancies on existing surveys. LZ Surveys may be obtained on Talon Point at talonpoint.net, and are also available on the Talon Point SIPR site: **https://talonpoint.snlca.nro.smil.mil/TalonPoint/home.xhtml**.

5.9.2. A thorough review of the LZ survey and accompanying photographs, computer drawings, or imagery will be accomplished by all crew members during the aircrew brief. (T-3). The PIC is responsible for ensuring that any crew member unable to attend the brief either reviews the landing zone survey or is briefed on the hazards associated with the LZ.

5.9.3. Aircrew may conduct air-land operations at airfields specified in the ASRR/ZAR and fields approved by OG/CC.

5.9.4. Tactical LZ surveys may be used during exercises and operational missions when a full LZ survey is unavailable due to the situation.

5.9.5. The OG/CC or COMAFSOF may approve the use of other DoD services or host nation equivalent LZ surveys.

5.9.6. Aircrew may land at an LZ marked with any Airfield Marking Patterns (AMP) configuration IAW DAFMAN 13-217 or this manual. Overt or covert markings may be used to define a LZ. The markings and signals to be used during LZ operations should be established during mission planning and included in the aircrew briefing.

5.10. Aircraft Taxi Obstruction Clearance Criteria. In addition to the requirements of AFMAN 11-218, comply with the following:

5.10.1. Without wing walkers, avoid taxi obstructions by at least 25 feet. With wing walkers, avoid taxi obstructions by at least 10 feet. **(T-2). Exception:** Standard taxi obstruction clearance distances may be reduced IAW AFMAN 11-218. When operating at a civilian airport and taxiing on a Fixed Base Operator (FBO) ramp, the PIC may taxi the aircraft within 25 feet of obstacles or other aircraft without wing walkers when using marked taxi routes. The PIC will comply with the marshaller's instructions. Taxi routes must be used by similar types of aircraft for which the routes were designed and in specifically designed parking spots. Support equipment shall be located in appropriately designated areas.

5.10.2. Do not taxi aircraft closer than 10 feet to any obstacle. **(T-3).**

5.10.3. When taxi clearance is doubtful, use a wing walker. If wing walkers are unavailable or if provided and doubt still exists as to proper clearance, deplane a crew member to maintain obstruction clearance. **(T-3).**

5.11. Reverse Taxi. Caution: Using brakes to stop the aircraft while reverse taxiing may result in aircraft empennage contacting the ground.

5.11.1. The pilot performing reverse taxi operations will coordinate reverse taxi directions and signals to be used with the marshaller (if applicable) prior to commencing reverse taxi operations. **(T-3).** Exercise vigilance if reverse taxi is accomplished without a marshaller.

5.11.2. During night reverse taxi operations, the pilot will ensure visibility in the taxi area is sufficient to conduct safe taxi operations. **(T-3).**

5.11.3. Stop no less than 25 feet from an obstruction even if using a wing walker. (T-2).

5.12. Operations Over Arresting Cables.

5.12.1. Avoid landing on non-recessed arresting cables.

5.12.2. Avoid rolling over arresting cables at speeds greater than a brisk walk during taxi, takeoff, or landing to preclude damage to bottom of aircraft. Maintain appropriate backpressure on aircraft yoke to reduce nose landing gear down force if inadvertently crossing an arresting cable at high speed.

5.13. Aircraft Recovery from Off-Field Surfaces. Aircrews should not attempt to recover an aircraft after inadvertent entry onto surfaces that are not suitable for taxi. Ground crews using appropriate equipment will normally recover the aircraft. Aircrews may recover the aircraft at austere locations if, after thorough inspection, the PIC has assured there is no aircraft damage and the surface will support the aircraft.

5.14. Approved Instrument Procedures. The PIC will not fly an instrument approach or departure at an airfield unless the procedure has been TERPS reviewed and approved by AFSOC or another MAJCOM and is valid for the date used. Approved procedures can be checked on Global Decision Support System 2 (GDSS2). (T-2).

Chapter 6

GENERAL OPERATING PROCEDURES

Section 6A—Pre-Mission

6.1. Aircrew Uniforms.

6.1.1. Aircrew will wear the appropriate uniform or flight clothing on all mission. Uniform, clothing, and equipment will be IAW AFI 11-301V1 AFSOC Sup, *Aircrew Flight Equipment (AFE) Program* and DAFI 36-2903, *Dress and Personal Appearance of United States Air Force and United States Space Force Personnel*. **(T-3).**

6.1.2. Aircrew may wear conservatively styled civilian clothing when required for mission or operational requirements and approved by the unit commander. Civilian clothing worn will consist of casual slacks or cargo pants, collared shirts, shoes or hiking boots. Denim jeans, T-shirts, or clothing predominately made from non-cotton materials are not authorized. When wearing civilian clothes, aircrew will comply with all requirements of **paragraph 6.2**. **(T-3).**

6.2. Personal and Professional Equipment.

6.2.1. Passports. Carry passports on missions when required by the Foreign Clearance Guide (FCG).

6.2.2. Shot Record. Aircrew members will ensure they meet immunization requirements for the mission area of operations. **(T-3).**

6.2.3. Identification. A valid US government issued identification card (CAC) will be carried on all flights. **(T-3).**

6.2.4. All aircrew members will have flight gloves readily available during all phases of flights. 22 **(T-3).**

6.2.5. Foreign Object Damage (FOD) Hazards. Aircrew will not wear wigs, hairpieces, rings, scarves, ornaments, pins, hair clips or fasteners, or earrings in the aircraft or on the flight line. **(T-3).** Crew members will remove rings and scarves before performing aircrew duties. **(T-3).** **Exception:** Plain elastic hair fasteners or plastic barrettes are allowed, providing they do not interfere with the wearing of headsets or helmets, or the donning of oxygen equipment. All devices will be accounted for before and after flight. **(T-3).**

6.2.6. Restricted Area Badges. Carry the restricted area badge on all missions (except combat missions) and display badge only in designated restricted areas.

6.2.7. Headsets. All crewmembers will bring a headset. **(T-3).**

6.2.8. NVGs. All pilots will have NVGs and spare batteries for missions using them. **(T-3).** Each pilot should preflight their own NVGs to the maximum extent possible. Preflight and carry a spare set of NVGs on missions where any of the intended runways is either unlit or covertly lit. **Exception:** A spare set of NVGs is not required for training missions where the final intended destination is not unlit or covertly lit. **(T-3).** Pilots will wear NVGs with similar acuity and gain. **(T-3).**

6.3. Survival and Protective Equipment. The unit will establish minimum survival and protective equipment to be worn or carried on a crew member's person for contingency or combat

operations. **(T-3).** All personnel will wear the survival and protective equipment provided during hostile environment operations. **(T-3).**

6.4. Overwater Flights/Duckbutt.

6.4.1. The SQ/CC, MC, and PIC will consider the following factors when mission planning:

6.4.1.1. Climate zone, water temperature, and existing weather throughout range and route of proposed flight. **(T-2).**

6.4.1.2. Operational requirements (e.g., fuel requirements from an Equal Time Point (ETP) at an altitude not requiring oxygen, glide procedures, number of aircrew, supplemental oxygen, etc.). **(T-2).**

6.4.1.3. Number, type, and communications capabilities of aircraft in nonstandard formation (if applicable). **(T-2).**

6.4.1.4. Time of flight and range over water beyond power off gliding distance. **(T-2).**

6.4.1.5. Location, availability, and capability of Search and Rescue (SAR) forces. Alert status and flying time from alert staging location of SAR aircraft (e.g., MC-130H/J, HC-130, US Coast Guard) to overwater route of flight. **(T-2).**

6.4.1.6. Anticipated time in water prior to rescue by SAR or commercial systems (e.g., cargo or fishing vessels, military or SAR ships). **(T-2).**

6.4.1.7. Winds, wave height, and their impact on SAR or commercial systems. **(T-2).**

6.4.1.8. Aircraft and ground communications ranges and capabilities, commercial shipping lanes, and air corridors transited by military aircraft and commercial air carriers. **(T-2).**

6.4.2. The PIC and MC will ensure all aircrew are briefed on and review aircraft ditching, water survival, and rescue signaling procedures. **(T-3).**

6.4.3. Utilize duckbutt support (a trailing aircraft with rescue personnel and equipment on board) to the max extent possible when conducting transoceanic flights beyond power off gliding distance from land. Approval authority to conduct transoceanic flights with reduced or without duckbutt support resides with the OG/CC or COMAFSOF for intra-theater movements, and AFSOC/A3 for inter-theater movements. The MSN/CC or SQ/CC may request additional support when risk factors or analysis deem necessary.

6.4.3.1. MSN/CC's of transoceanic flights beyond power off gliding distance from land will inform OG/CC or COMAFSOF and the AFSOC/A3 of proposed operations, routing, and risk mitigation factors prior to commencing overwater operations. **(T-2).**

6.4.3.2. The AFSOC agency (OC or SOAOS) with C2 responsibility will notify USCG Area, Incident Management, of planned transoceanic crossings for U-28s. USCG points of contact: Atlantic Area Incident Management (LANT-35IM): **LANT.IMT@USCG.mil** 757-398-6418 Pacific Area Incident Management (PAC-35IM): **rccalameda@uscg.mil** and 510-437-3701 or 510-437-3074. AOC or AOS will follow procedures outlined in A3 Quarterly AO Directive. **(T-3).**

6.4.3.3. See **Attachment 3** for pre-mission and day of mission transoceanic crossing operational risk mitigating procedures matrix. See **Attachment 4** for required life support equipment for overwater flights beyond glide distance to a suitable airfield.

6.5. Aircrew Publication Requirements.

6.5.1. Aircrew will maintain the unclassified publications specified in **Table 6.1** either electronically or hard copy. Publications will include all applicable AFSOC, Wing, Group, or Squadron Supplements. **(T-2).** Home-station airfield and operations group publications are required for operations that originate from their station. **(T-2).**

Table 6.1. Required Publications.

PUBLICATION	PILOT	CSO
AFMAN 11-202V1	I	I
AFMAN 11-202V2	E	E
AFMAN 11-202V3	X	X
DAFMAN 11-401	X	X
AFM 13-207-O	X	X
DAFMAN 13-217	X	
AFMAN 11-2U-28V1	X	X
AFMAN 11-2U-28V2	E	E
AFMAN 11-2U-28V3	X	X
AFPAM 11-216		X
AFSOCI 36-2602	I	I
AIM	X	
TECHNICAL ORDER/MANUAL	**PILOT**	**CSO**
U-28 AOH Vol 1 & 2	X*	X*
U-28 AOH Vol 2-Vendor Manuals	X	X
U-28 QRH	X*	X*
U-28 MEL & MESL	X*	X
Key: **X** = Required/Issued **I** = Instructors **E** = Evaluators ***** = Required In-Flight		

6.5.2. For electronic publications, all applicable supplements, changes, and other official modifications of publications will be incorporated in electronic versions. **(T-2).** Hard copy FLIP, publications, and checklists are not required if the aircrew use EFBs in compliance with AFMAN 11-202V3 AFSOC Sup. **Note:** Consider carrying hard copy publications on sorties when flight gloves or other protective gloves are required (EFB touch screens may not work with gloves or an unpowered-stylus).

6.5.3. EFBs and Accessories. EFB use will comply with AFMAN 11-202V3 AFSOC Sup. **(T-2).** EFBs and accessories (e.g., Stratus) may be powered by aircraft 120V AC power outlets for charging. Aircrew will not allow them to connect to mission systems (e.g., via USB). **(T-2).**

6.6. Aircraft Mission Kits. The PIC or a designated representative will ensure a current mission kit is on board the aircraft. **(T-2).** The kit will contain, but is not limited to the items listed below. **(T-2).** Maintain sufficient quantities of directives and planning documents to allow implementation of evacuation and contingency plans:

Figure 6.1. Aircraft Mission Kit.

20	AF Form 457, *USAF Hazard Report*.
21	AF Form 651, *Hazardous Air Traffic Report (HATR).*
22	AF Form 711B, *USAF Mishap Report*.
23	AFSOC Form 97, *Incident Report*.
24	DD Form 175, *Military Flight Plan.*

6.6.1. DD Form 1385, *Cargo Manifest.*

6.6.2. DD Form 1801, *International Flight Plan.*

6.6.3. CF 6059B Form, *Customs Declaration.*

6.6.4. DD Form 2131, *Passenger Manifest.*

6.6.5. SF 44, *Purchase Order – Invoice Voucher.*

6.6.6. Foreign Nation's Customs Forms (when applicable).

6.6.7. All applicable home station forms.

6.7. Route Navigation Kits.

6.7.1. Pilots and CSOs will ensure EFBs meet FLIP requirements per **para 6.7.2**. **(T-2).** If less than three EFBs are on board, the PIC or designated representative will ensure at least one set of paper FLIP is available during flight. **(T-2). Note:** Consider carrying hard copy publications on sorties when flight gloves or other protective gloves are required (EFB touch screens may not work with gloves or an unpowered-stylus).

6.7.2. The following items and applicable change updates will be included in enroute navigation kits:

6.7.2.1. DoD FLIP IFR Supplement (one each). **(T-2)**

6.7.2.2. DoD FLIP Visual Flight Rules (VFR) Supplement (one each). **(T-2)**

6.7.2.3. DoD FLIP Flight Information Handbook (FIH) (one each). **(T-2)**

6.7.2.4. DoD FLIP IFR Enroute Charts (one set for enroute segments and area of operation). **(T-2)**

6.7.2.5. DoD or FAA/National Aeronautical Charting Office (NACO) FLIP Instrument Approach Procedures (two sets for area of operation including enroute stops and diverts). Reference AFMAN 11-202V3 AFSOC Sup for information on guidance for using Host Nation or commercial instrument approach procedure products. **(T-2)**

6.7.2.6. Maps and Charts (including VFR sectional aeronautical charts as required). **(T-2)**

6.7.2.7. FAA (NACO) Airport Facility Directories (one for each applicable region as required). **(T-2)**

6.7.2.8. Standard Instrument Departure and Standard Terminal Arrival Route procedures. **(T-2)**

6.7.3. Applicable information in FLIP Planning guides (e.g., General Planning, AP/1, AP/2, AP/3, AP/4) may also be included in enroute navigation kits. **(T-2)**

6.8. Airfield Review. If a restriction applies to C-12, BE-200/350, or similar type of aircraft in the Airfield Suitability and Restriction Report or Airfield Qualification Program, U-28 crews will comply with the applicable restriction. **(T-3).**

6.9. Intelligence Briefing. Before departing on missions outside the United States, crews will receive an intelligence briefing that will emphasize terrorist, enemy, and friendly political and military development in the area in which they will be operating. **(T-3).** In theater, aircrews should receive intelligence updates on initial arrival at a forward operating location, or enroute stop, and thereafter when significant developments occur. Report information of possible intelligence value to the local intelligence office at the completion of each mission.

6.10. Authenticators and Classified Material. Obtain and safeguard current authenticators and other classified materials required for area being transited. Carry authenticators when flying into an Air Defense Identification Zone (ADIZ), participating in exercises, on overseas missions, deployments, and when specified in operation plans. The communications security material required depends on the theater of operation and user.

6.10.1. Turn in authenticators and other classified materials at destination (if applicable) and obtain receipts for classified material. Issue and turn-in of authenticators is normally a function of base operations. At locations where no storage facilities exist, the PIC will ensure classified material is properly protected. **(T-3).**

6.10.2. Remove/Zeroize any potential or classified information in the Flight Management System and/or GPS, aircraft radios, or mission systems/software when not required for flight or continuous mission operations. The PIC is responsible for all classified materials. **(T-3).**

6.10.3. In an emergency, destroy or damage classified material and equipment prior to crash landing if possible. Follow destruction procedures IAW current guidance specific to each location.

6.11. Call Signs. Use Voice Call Sign Listing or as specified in mission directives for all missions except local area training missions. Use squadron or wing static call signs as directed for local area training missions.

6.12. International Procedures. The PIC will review the FCG and brief crew members on applicable items before flights outside the CONUS. **(T-3).** Comply with Customs, Immigration, Agriculture, Immunization, and quarantine requirements. The unit dispatching the mission is responsible for border clearance and other special clearances when required. Entry into foreign countries by personnel and equipment is directed by military agreements, diplomatic agreements, directives of the operational control commander, International Civil Aviation Organization (ICAO) standards, and the FCG.

Section 6B—Pre-departure

6.13. Briefing Requirements. Briefings should be clear, concise, and designed to provide mission essential information. The PIC will ensure their crews receive a briefing, prior to each mission, covering all specific areas to be accomplished. **(T-3).** U-28 crews should use the briefing guide found in the Draco Battle Book when performing a crew briefing. The OPR for the Draco

Battle Book is the U-28A Command Weapon Officer in AFSOC/A3TW. Submit change requests and updates to the squadron Weapons Officer.

6.13.1. If critical pre-mission duties conflict with the briefing, the PIC may excuse crew members. Prior to engine start, the PIC will give a mission brief to any excused crew members detailing all areas pertinent to their duties. **(T-3).**

6.13.2. The PIC will brief the following factors:

6.13.2.1. Weather. Determine the effect of current and forecast weather on the takeoff, mission, and landing areas. Wind will be evaluated by the aircrew for its effect. **(T-3).**

6.13.2.2. TOLD. Compute and brief applicable TOLD and power requirements for mission, airfield, or LZ operations. **(T-3).**

6.13.2.3. Approach and Departure. Brief the planned approach and departure routes as well as significant terrain features. **(T-3).**

6.13.2.4. Airfield/LZ dimensions and surface conditions. **(T-3).**

6.13.2.5. Abort criteria. Brief abort considerations to include the takeoff and landing commitment points and engine failure after rotation options, intentions, and turn back altitude. Update and brief turn back altitude using the same criteria as TOLD in **paragraph 6.22.2**. **(T-3)**

6.13.2.6. Other Hazards. Known personnel and equipment locations will be briefed. **(T-3).** If other aircraft, vehicles or personnel are operating in the area, attempt to determine their effect on the LZ, taxi routes, or aircraft parking area. Brief any other special considerations such as parking locations, onload/offload procedures, fueling locations, equipment and procedures, etc. **(T-3).**

6.13.2.7. Simulated Engine Emergencies. Brief any simulated engine emergencies, to include a discussion of Crew Resource Management (CRM), applicable checklists, and the termination and recovery procedures.

6.13.3. Passenger Briefings (if applicable).

6.13.3.1. Prior to each flight with passengers on board, the PIC will ensure that a briefing has been conducted. **(T-3).** When more than one flight is accomplished by the same crew and passengers, subsequent briefings are not required, except to brief route information, mission changes, etc.

6.13.3.2. The passenger briefing will include demonstration of seat belt, emergency oxygen, fire extinguishing systems, and location/operation of normal and emergency exits. All overwater flights will include a briefing on personal and aircraft life support equipment.

6.14. Flight Crew Information File (FCIF). Review Volume I, Part A, of the FCIF before all missions.

6.14.1. Update FCIF Currency Record and Squadron read file, if new material has been added to the FCIF since the last review. Legibly enter the last FCIF item number, the current date, and initial the FCIF Currency Record or complete required electronic review procedures if FCIF is stored electronically (e.g., Patriot Excalibur). When unable to sign the FCIF Currency Record or complete electronic FCIF review procedures, initialing and numbering the latest

FCIF by an individual's name on the flight authorization orders certifies the FCIF Currency review of all items is complete. During deployed operations or contingencies, mission planning crews will maintain a hard copy of home station and MAJCOM FCIFs for aircrew review. **(T-3).**

6.14.2. PIC will ensure any crew members joining a mission enroute receive an FCIF update. **(T-3).** Instructor pilots who fly with senior officers are responsible for briefing FCIF items.

6.15. Flight Planning Systems. The primary flight/mission planning system is the AFSOC Mission Planning Environment (MPE). The AFSOC MPE is a configuration of hardware and software provided by the USSOCOM Special Operations Mission Planning and Execution (SOMPE) Office. Currently, the MPE is comprised of X-Plan. Upgraded or new versions of the AFSOC MPE and U-28 specific software W&B/FPM/TOLD/AWE's/etc. will be released and authorized by the AFSOC/A3VZ for use after applicable testing has been completed.

6.16. Coordinates. The following procedures will be used: **(T-3) Note:** Aircrew will confirm a common datum with their mission users during the mission planning process. Failure to plan navigation to LZ or mission areas using a common datum may result in errors of up to several miles. Computer based mission planning systems and aircraft navigational systems generally use WGS84 as reference datum. Attempt to use WGS84 whenever possible to minimize confusion.

6.16.1. When reporting or receiving positions using coordinates derived from maps, charts, or related cartographic products, a complete reference to the source of the coordinates will be provided. **(T-3).** This reference will include the datum map or chart producer, series, sheet number, edition and date. **(T-3).**

6.16.2. When reporting or receiving positions using coordinates derived from non-cartographic sources such as GPS receivers, Analytical Photogrammetric Positioning Systems, or related systems, a complete reference to the source of the coordinates will be provided. This reference will include the datum, method used to derive the coordinates, agency producing the coordinates, and accuracy of the coordinates. **(T-3).**

6.17. Flight Logs. Prepare a flight log for each off-station mission and include the following as a minimum: turn points, headings, distances, estimated time enroute (ETE), Minimum Safe Altitude (MSA), and fuel computations. A flight log is not required for local training flights or when mission requirements are unknown (such as during an alert status), or if the above information is included on a flight map.

6.18. Weather Planning. Comply with AFMAN 11-202V3 AFSOC Sup weather minimums unless local or theater specific weather minimums are more restrictive. **(T-2).**

6.18.1. Thunderstorms. Do not fly above (within 2,000 ft.) thunderstorms or cumulonimbus clouds.

6.18.1.1. If unable to vertically clear thunderstorms or cumulonimbus clouds, by at least 2,000 ft.

6.18.1.2. Avoid thunderstorms by 20 nautical miles (NM) at or above FL 230.

6.18.1.3. Avoid thunderstorms by 10 NM below FL 230.

6.18.1.4. Avoid thunderstorms by 5 NM for combat operations below FL 280, if mission requirements dictate.

6.18.2. Avoid gust fronts and winds preceding a rapidly moving thunderstorm. **CAUTION:** Aircraft damage may occur 20 NM or more from any thunderstorm. Aircrews must familiarize themselves with information on thunderstorm development and hazards.

6.18.3. Aircrews should avoid flying in areas of recently dissipated thunderstorms and adverted clouds (horizontal movement of clouds caused by wind) downwind of thunderstorms.

6.18.4. In order to minimize exposure to thunderstorm hazards when approaching or departing an airport in an area where thunderstorms are occurring or are forecast:

6.18.4.1. Attempt to maintain visual meteorological conditions (VMC).

6.18.4.2. Maintain at least 5 NM separation from heavy rain showers.

6.18.4.3. Avoid areas of high lightning potential. **Note:** Approaches or departures may be accomplished when thunderstorms are within 10 NM providing they are not producing any hazardous conditions (such as hail, lightning, strong winds, gust fronts, heavy rain, wind shear, or microburst) at the airport, and are not forecast or observed to be moving in the direction of the route of flight (to include the planned missed approach corridor, if applicable).

6.19. Lunar Illumination. Any mission planned when the lunar illumination is forecast to be less than 10% during any portion of the mission will require an additional level of Operational Risk Management (ORM). If a tactical approach using NVGs is to be accomplished when the illumination is below 10%, the PIC must receive authorization from the commander or designated representative. **(T-3).** ***WARNING:*** NVGs worn during flights with illumination less than 10%, ("black hole" conditions) can lead to induced motion illusions and spatial disorientation.

6.20. Fuel Planning. Use criteria outlined in AFMAN 11-202V3 AFSOC Sup. Aircrews will conduct appropriate in-flight planning to ensure proper fuel management. Reference **Attachment 2** for ETP discussion and calculations. **(T-3).**

6.20.1. Alternate Fuel. When two alternates are required, flight plan to the most distant alternate. Aircrew should plan sufficient fuel to hold for one hour in lieu of an alternate for remote or island destinations.

6.20.2. Fuel Requirements. Land with no less than either the required AFMAN 11-202V3 reserve fuel, or 200 pounds, whichever is greater.

6.20.2.1. Minimum Fuel is 200 pounds. Emergency Fuel is 150 pounds.

6.20.2.2. Pilots will declare "Minimum Fuel" or "Emergency Fuel" to ATC when, in their judgment, the aircraft may land at the intended destination with less than the minimum/ emergency fuel reserve. **(T-3).**

6.20.3. Plan to consume 100 pounds per instrument approach, and 25 pounds per VFR pattern to be flown.

6.20.4. Plan an additional 15 minutes of fuel per hour (using maximum cruise power fuel consumption rate) for each portion of the flight where structural icing or thunderstorms requiring off-course maneuvering are forecast or reported.

6.21. Objective Area Planning.

6.21.1. Pilots will ensure all maps used for flight have the most current hazards posted. **(T-3).** Aircrew will also ensure appropriate civil airspace is annotated along their route of flight. **(T-3).**

6.21.2. Emergency Safe Altitude (ESA). An ESA is an altitude that will provide positive terrain clearance should Instrument Meteorological Conditions (IMC) be encountered. Use 1,000 feet (2,000 feet in mountainous terrain) above the highest obstacle or terrain feature within 10 NM of the intended flight path/objective area rounded up to the next 100 feet. An ESA will be computed for all objective areas. **(T-3). Note:** Mountainous areas are defined as having a 500 foot change in surface altitude over ½ NM. For operations outside of the CONUS, reference AFMAN 11-202V3 AFSOC Sup.

6.21.3. Minimum Safe Altitude (MSA). An MSA is an altitude that provides VMC terrain clearance and limited threat avoidance during degraded aircrew situational awareness or periods of task saturation. Use 500 feet above the highest obstacle or terrain feature within 5 NM of the intended flight path/objective area rounded up to the next 100 feet. An MSA will be computed for all objective areas. **(T-3).**

6.21.4. Aircrews may use the published ESA or MSA in applicable FLIP in lieu of calculating safe altitudes for covered areas. The published ESA and MSA definitions are more conservative than the altitudes calculated using paragraphs **6.21.2 and 6.21.3**. ***WARNING:*** Failure to maintain an accurate altimeter setting during flight may cause lower than planned terrain clearances or impact with terrain when using the computed ESA/MSA.

6.22. Aircraft Performance.

6.22.1. Weight and Balance. Weight and balance will be computed using the AOH or equivalent electronic program. **(T-2).** A copy of each mission's weight and balance will be maintained at the squadron or operations center (as applicable) and carried with the aircrew, either hard copy or electronically. **(T-2).** For enroute stops, weight and balance need not be recomputed provided the zero fuel weight has not changed. The crew will compute in-flight crew and passenger equipment movement to ensure Center of Gravity limits are not exceeded. **(T-2).** These computations will be briefed during the crew or mission brief or during flight, as required. **(T-2).**

6.22.2. TakeOff and Landing Data (TOLD). Compute TOLD using the AOH performance data charts or U-28 eTOLD app. **(T-2).** Compute TOLD for initial takeoff and planned airfields prior to engine start. **(T-2).** Re-compute data for increases of at least 500 feet density altitude (via pressure altitude and/or outside air temperature change), or 500 lbs gross weight. **(T-2).**

Section 6C—Preflight

6.23. Aircraft Maintenance Forms.

6.23.1. Review the aircraft maintenance forms before applying power to the aircraft or operating aircraft systems. **(T-2).**

6.23.2. The Air Card is used to pay for services such as aviation fuel, aircraft oil and fluids, minor maintenance items, landing fees, aircraft deicing, follow-me trucks, and other airfield related services at commercial FBO locations.

6.23.2.1. The PIC will ensure that the AIR fuel card and/or other authorized method of payment are aboard the aircraft.

6.23.2.2. The PIC is responsible for ensuring a receipt is received and is correct, with all appropriate signatures obtained before departing. **(T-3).** If services do not generate a receipt, ensure the location and services performed are noted and relayed. **(T-3).** Turn in all service receipts upon return to home station. **(T-3).**

6.23.3. The maintenance release and preflight must be signed before flight. A maintenance officer, maintenance superintendent, authorized contract civilian, or PIC will sign the maintenance release and preflight. **(T-3).**

6.23.4. Ensure that aircraft locking keys are on board aircraft prior to flight.

6.23.5. Ensure the aircraft protective covers are on board aircraft prior to flight.

6.24. Aircraft Inspections.

6.24.1. The PIC or designated crewmember will accomplish the aircraft inspection. **(T-3).**

6.24.2. Face-to-face turnovers between crew members are acceptable.

6.24.3. During higher headquarters directed exercises or contingency operations, any qualified aircrew may accomplish the preflight inspection and brief the oncoming aircrew.

6.25. Alert Aircraft Procedures. Complete a normal aircraft preflight prior to accepting an aircraft on alert. Allow maintenance personnel to inspect the aircraft every 72 hours on alert. After maintenance has inspected the alert aircraft preflight, re-accomplish alert aircraft acceptance procedures IAW 6.25.4.

6.25.1. Climatic Protective Facilities. During periods of extreme cold, hot, or severe weather, every effort should be made to shelter alert aircraft and essential equipment in a hangar to ensure operational readiness in the event of a mission.

6.25.2. Flying Alert Aircraft. The alert aircraft may be flown for purposes other than actual alert missions provided the following conditions are complied with:

6.25.2.1. Ensure sufficient fuel remains on board to meet mission requirements. If not, upon flight completion, refuel the aircraft to required alert fuel quantity.

6.25.2.2. Communication contact is maintained with the primary controlling agencies.

6.25.2.3. A qualified aircrew for the alert mission is on board.

6.25.2.4. Controlling agencies are notified any time the alert aircraft departs the local area.

6.25.2.5. If the alert aircraft is flown for reasons other than the alert intent, compute data for that flight using existing weather conditions. Refer to 3.9.2.

6.25.3. Once accepted for alert, the alert aircrew will make an entry in the aircraft maintenance forms, stating, "Aircraft accepted on alert at_." (local time and date). **(T-3).** No maintenance may be performed on it without prior approval of the alert crew PIC and notification of the SQ/DO or deployed MC. To ensure integrity of the aircrew preflight, an alert crew member

must be present whenever maintenance is performed, or at the completion of the maintenance, the aircrew is required to check the area in which maintenance was performed. The check should be performed as soon as practical after the maintenance and must be performed prior to flight. **(T-3).**

6.26. Aircraft Servicing and Ground Operations.

6.26.1. Coordinate with local base operations or FBO representatives on procedures for servicing the aircraft while the aircrew is not present at locations without U-28A maintenance personnel. Pilots are allowed to add engine oil if needed.

6.26.2. Aircrew/Maintenance Engine Runs. Mixed aircrew/maintenance engine runs should not normally be accomplished. If conducted, the appropriate AOH or maintenance inspection procedures will be used. **(T-3).**

6.26.3. Battery-Assistance Device Starting Procedures. When maintenance personnel are not available and battery power is insufficient to start the aircraft, aircrew may use a battery-assistance device for engine start. The crew will use the ERO checklist to deplane/enplane two crew members. One will proceed to the rear of the plane to operate the starting device, the other will remain near the front left side of the aircraft to relay hand signals. Both deplaned crewmembers must wear ear and eye protection. Use normal marshalling signals for external power and engine start. Crews must ensure instructions on the unit are legible and that the manufacturer provided diagnostic card is present in order to operate the unit. Reference **Table 6.2** for further information on battery-assistance device fault codes. **(T-3).**

6.26.3.1. Crews will only use devices approved by maintenance personnel. **Note:** These devices will not start a dead battery.

Table 6.2. Battery-Assistance Device Fault Codes.

Fault Code	Definition
Too Cold	Battery core temperature is too cold to safely conduct a start. Warm upbattery or motor engine until "Too Cold" is no longer displayed.
Over Current	Battery has exceeded rated output. Remove battery from aircraft, turn battery off and on again to clear fault. If fault persists, contact themanufacturer.
Charge Battery	Battery voltage has dropped below minimum threshold and requires charging. Plug charger in and charge battery until 100% state of charge (SOC).
Short	Battery output has been shorted. Remove battery from aircraft, turnbattery off and on again to clear fault. If fault persists, contact the manufacturer.
Low Voltage	A cell in the battery pack has dropped below the minimum allowable voltage. Remove battery from aircraft, turn battery off and on again toclear fault. If fault persists, contact the manufacturer.

No Start	Battery is below safe level to perform engine start. Output is still available but should not be used for engine start. Place battery on charge.

6.27. Life Support and Oxygen Requirements.

6.27.1. The PIC or designated representative will ensure sufficient quantities of appropriate serviceable life support gear, survival equipment, and protective clothing for the entire mission are aboard the aircraft. **(T-3).**

6.27.2. Verify Air Force Technical Order (AFTO) Form 46, *Prepositioned Life Support Equipment*, following each crew change and prior to departing home station.

6.27.3. Life support equipment and medical kits weighing less than 200 lbs may be secured with seat belts.

6.27.4. Life rafts will be available to accommodate all personnel on board and aircrew members will wear Life Preserver Units (LPU) and on all overwater flights when route of flight is beyond power off gliding distance from land. **(T-3).** LPUs will be available for crew use anytime the route of flight is over water. **(T-3).** Passengers will have life preservers available and will be worn at the discretion of the PIC. **(T-3).** LPUs and life rafts are not required when overwater flight occurs during instrument approach procedures under ATC control, immediately after takeoff, and before landing.

6.27.5. Anti-exposure suits for the aircrew and passengers will be on board during any preplanned overwater flights which are beyond power off gliding distance from land and the water temperature is 60° Fahrenheit (F) (16° Celsius (C)) or less. **(T-2).** The anti-exposure suits will be worn by pilots on flights which are beyond power off gliding distance from land and the water temperature is 60°F (16°C) or less. **(T-2).** Anti-exposure suits are not required when overwater flight occurs during instrument approach procedures under ATC control, immediately after takeoff, and before landing.

6.27.6. Oxygen requirements are outlined in AFMAN 11-202V3 AFSOC Sup. Crew will accomplish an operations check of their oxygen masks prior to flight. **(T-2).** Oxygen masks will be available and connected for all aircraft occupants for use from before engine start through engine shutdown. **(T-2).**

6.28. In-flight Meals. The pilots will not consume in-flight meals within 1½ hours of each other during flight if the meals were procured from the same source and consist of the same menu. **(T-3).**

6.29. Cockpit Congestion and Loose Objects.

6.29.1. The flight deck area will be kept as uncluttered and orderly as possible for all flight and ground operations. **(T-3).** Specifically:

6.29.1.1. During engine start and ground operations, no items (checklist, charts, etc.) should be placed in a position that would prevent inspection of aircraft and engine instruments or switches.

6.29.1.2. During flight, no items (checklists, charts, etc.) will be placed in a position that covers or hides any flight or engine instruments from the view of the PF. **(T-3).**

6.29.1.3. Publication kits, flight kits, and personal kits will not be placed where they may interfere with the flight controls or egress. **(T-3).**

6.29.1.4. Publication kits, flight kits, personal kits, carry on systems, life support equipment, aircrew weapons, and other objects in the aircraft, while not being actively used, must be secured in a manner to prevent them from causing injury to aircrew or damage to the aircraft in the event of sudden maneuvers, turbulence, or hard landings. **(T-3).**

Section 6D—Departure

6.30. Departure Procedures. Before initial takeoff, the PF will brief the aircrew on the procedures to be followed during takeoff and departure, performance data, and intentions in case of an emergency. **(T-3).**

6.30.1. Upon setting maximum power available, the PNF should check that indicated torque approximates the calculated static takeoff torque value, ITT and propeller RPM are within limits, and call "GOOD ENGINE." Upon reaching rotation speed, the PNF should call "ROTATE."

6.30.2. Any crew member noting a safety of flight malfunction before rotate speed will state, “REJECT” or "ABORT" and give a brief description of the malfunction. **(T-3).** The PIC will brief abort criteria prior to takeoff roll if not accomplished in the pre-brief. **(T-3).**

6.30.3. Defensive posturing. The PNF will maintain defensive posture and be prepared to immediately take controls while in the terminal area. **(T-3).**

6.30.4. Self-Contained Departures (SCD). All U-28 variants are authorized to conduct AFSOC-termed SCDs, a MAJCOM certified procedure, IAW AFMAN 11-202V3, AFSOC SUP, **paragraphs 5.30 and 5.30**.1. U-28 SCD procedures are for a specialized operational mission capability, and not an instrument-related event that must be accomplished under IFR. For IMC approval, see **paragraph 6.45.1** in this manual.

6.30.5. SCD Construction. See **paragraph 6.45.2** Additionally, departure procedures may be constructed as turning or straight ahead. Ensure departure is planned from the departure end of the runway a 0 ft HAT. Ensure no obstacles penetrate a 100 ft/NM climb gradient. See Self-Contained Approaches/ Self-Contained Departures (SCA/SCD) builder’s guide for further construction guidance. **(T-2).**

6.31. On Time Takeoffs. Mission departures are considered “on time” if the aircraft is airborne no earlier than 30 minutes prior or 15 minutes after the scheduled takeoff time. Early departures are authorized provided local, down-range, and aircrew impact are evaluated and no adverse effect will result.

6.32. Transponder/Aircraft Identification. If installed, operate Mode 5 IAW theater and operational directives. Operational check of the Mode 5 will be made prior to takeoff (test equipment permitting). **(T-1).** The preferred and primary method of testing Mode 5 is with the ground test set. Do not plan to penetrate the ADIZ without an operational Mode 5.

6.32.1. Ground and in-flight checks are mandatory maintenance debrief items. Crews will annotate any failure or unsuccessful interrogation of the Mode 5 in the aircraft forms. **(T-3).**

Units will develop procedures for accomplishing the Mode 5 ground check. **(T-3).** The check should be coordinated between aircrew and maintenance during the aircraft preflight.

6.32.2. Interrogation Friend or Foe (IFF) modes 1, 2, 3A and S codes are not classified and may be left set in the transponder. IFF Mode 5 codes will be zeroized before leaving the aircraft for extended periods of time. **(T-3).**

6.32.3. Operate U-28 Mode S and ADS-B Out IAW AFMAN 11-202V3. Mode S address codes are unique to each tail number, and the correct address can be found placarded on the 45 panel near the IFF.

6.33. Enhanced Ground Proximity Warning System (EGPWS). Operate the EGPWS IAW the U-28 AOH and AFMAN 11-202V3. **(T-2).** During VMC, terrain warnings do not need to be followed if the crew can verify the warning is false by visual contact with terrain or obstacles. In this case, the PF or PNF should state, "Acknowledged, visual." If any crewmember sees any unsafe situation developing, they should announce, "Knock it off" or "Recover." WARNING: Do not delay pull-up for diagnosis of any EGPWS warning.

6.33.1. For "PULL UP" alerts, the PF will immediately execute a go-around or recovery to clear the EGPWS warning IAW the AOH, unless:

6.33.1.1. During day VMC or night VMC with NVGs, the PF can visually confirm the terrain clearance and a safe flight path, IAW **para 6.33**. **(T-3).**

6.33.1.2. During night VMC unaided, the aircraft is established on a segment of a published instrument approach and a safe flight path to the runway is assured (e.g., PAPI or VASI indicating on or above glide path). The PF will state, "Acknowledged, visual." **(T-3).**

6.33.2. For "TERRAIN" or "OBSTACLE" alerts, the PF will immediately maneuver the aircraft to clear the EGPWS alert, unless visual IAW **para 6.33**. **(T-3). WARNING:** Do not delay pull-up to try to identify the obstacle.

6.33.3. For "SINK RATE" or "DON'T SINK" alerts, the PF will adjust the aircraft descent or climb rate to clear the EGPWS alert and state, "Acknowledged, correcting." **Exception:** A steep visual or tactical arrival may trigger a "SINK RATE" alert. The PF should adjust the descent rate to clear the alert, but may continue the steep descent provided the flight path is visually clear and remaining altitude is sufficient to level off safely above the terrain. The PF should state, "Acknowledged, visual." **(T-3).**

6.33.4. For "FLAPS" alerts during a stable, planned, zero-flap approach to landing, the crew may continue the approach. The PF should state, "Acknowledged, expected." If the zero-flap approach is unstable or was unplanned, the PF should execute a go-around or recovery. **(T-3).**

6.33.5. Terrain and Flap Inhibit switches. The EGPWS provides a safety warning for aircrews, and should be active to the maximum extent possible. The Terrain and Flap Inhibit switches, used together, cancel all protective alert functions of the EGPWS and crews should give careful consideration to the situation before selecting inhibit. The Terrain and Flap Inhibit switches will only be selected if the aircraft is stable and on a safe flight path. The PNF will state "Terrain inhibited" or "Flap inhibited" after selecting INHIBIT ON at the request of the PF. **(T-3).**

6.33.5.1. For airfields that are not in the database and while VMC, the EGPWS Terrain Inhibit may remain selected (alerts inhibited) for subsequent closed patterns. ***WARNING*:** The EGPWS Terrain Inhibit switch will be deselected (alerts uninhibited) when departing the closed pattern (e.g., proceeding to high key, a tac arrival, IAP, or leaving the area), IAW the After Takeoff Pattern Checklist. **(T-3)**

6.34. Traffic Collision Avoidance System (TCAS) Operations. Failure to acknowledge a traffic advisory may increase the probability of a midair collision. If configured, all crew members will monitor voice callouts. **(T-3).** Use the above/below/normal/unrestricted settings as appropriate for the phase of flight and mission. **Warning:** Do not perform avoidance maneuvers based solely on a TCAS Traffic Alert's (TA) horizontal position, it is not accurate enough to prevent collision.

6.35. Wake Turbulence and Wind Shear Avoidance.

6.35.1. Pilots must ensure wake turbulence avoidance criteria are met during flight operations. **(T-2).** Acceptance of a visual or contact approach clearance, or instructions to follow an aircraft, is acknowledgement that the pilot will maintain a safe interval for wake turbulence avoidance.

6.35.2. The PIC will exercise caution when conducting taxi or flight operations within the vicinity of helicopter(s) or tilt-rotor aircraft. **(T-3).** In a slow hover-taxi or stationary hover near the surface, helicopter main rotor(s) or tilt-rotor aircraft produce high velocity downwash vortices out to a distance approximately three times the diameter of the rotor. In forward flight, departing or landing helicopters or tilt rotor aircraft produce a pair of strong, high-speed trailing vortices similar to wing tip vortices of larger fixed-wing aircraft.

6.35.3. The U-28 is an Aircraft Wake Category (AWC) F aircraft, as defined in DoD FLIP General Planning Chapter 2. To avoid wake turbulence from higher Wake Categories aircraft, the PF will maneuver to avoid the climb/descent profile of the leading aircraft, and:

6.35.3.1. Following an arriving aircraft, land or rotate past the leading aircraft's touch down point. If unable, using the distance/timing restrictions in **Table 6.3**. **(T-2).**

Table 6.3. Wake Turbulence Mitigation for Arrivals.

Category	Spacing (nautical miles)	Spacing (minutes)	Example Aircraft
A	8	4.0	A380, AN225
B	7	3.5	B747, B777, C-5, B-52
C	6	3.0	B-1, KC-135, KC-10, B767
D	5	2.5	C-130, B757, A320, B737, MD-88
E	4	2.0	CRJ1/2/7/9, E135, G4
Note: Timing restrictions are based on following at 120kts, the FAA and ATC use distance to create proper spacing. Use either distance or timing to ensure spacing.			

6.35.3.2. Following a departing aircraft, land or rotate prior to the leading aircraft's rotation point. If unable, use 3 minute spacing behind aircraft in AWCs A & B, and 2 minute spacing behind aircraft in AWCs C-E. **(T-2).** If operating off of Closely Spaced Parallel Runways (CSPR), be aware that ATC may consider the upwind runway wake free

in the case of a departure on the downwind runway. The PIC always retains the ability to request spacing.

6.35.4. Reference FAA AC 90-23G, *Aircraft Wake Turbulence*, and AFMAN 11-202V3, *Flight Operations*, for additional wake turbulence information and avoidance techniques. The full list of Aircraft Wake Categories can be found at: **http://www.faa.gov/air_traffic/publications/media/aircraft_characteristics.pdf**.
Warning: Wind can affect the path and duration of wake turbulence thereby prolonging the turbulence hazard or placing the turbulence in an unanticipated location. The PF is expected to adjust aircraft operations and flight path as necessary to preclude serious wake encounters.

6.35.5. Wind shear is any rapid change in wind direction or speed. Wind shear at low altitudes and slow airspeeds is the most dangerous. Pilots should look for airspeed changes of greater than 15 knots or vertical speed changes of more than 500 feet per minute, both of which indicate a possible wind shear condition. Below 100 feet while on an approach, if indicated airspeed and expected ground speed are more than 15 knots different, pilots should consider initiating a go- around.

Section 6E—Enroute

6.36. Enroute Briefings and Procedures. Pilots should conduct in-flight briefings, as necessary, to cover any unusual circumstances and when flight safety or other conditions require the nonstandard accomplishment of any maneuver.

6.37. Flight Progress. Use all available navigation aids to maintain course centerline and a positive fix on the aircraft's position. **(T-3).**

6.38. Crew Duties and Responsibilities.

6.38.1. Transfer of Aircraft Control. The transfer of aircraft or flight controls will be accomplished using a positive change of controls. **(T-3).** Use the statement "Pilot/Copilot has controls" to transfer control. The other pilot will acknowledge the change of aircraft control by stating "Pilot/Copilot has controls". **(T-3).**

6.38.2. Interphone Communications. In the terminal area or during critical phases of flight, limit interphone conversations to those essential for crew coordination. During other phases of flight, do not allow interphone conversations to interfere with the safe conduct of the flight, effective CRM, or communication with outside agencies. In all cases, the PIC is responsible for determining when interphone conversations are appropriate.

6.38.3. All crew members will maintain communications on aircraft interphone prior to engine start through "BATT…OFF (P)" on the engine shutdown checklist. **(T-3).** Clearance is required from the PIC prior to an aircrew member removing headset. The aircrew member will advise the PIC when they have resumed monitoring the aircraft interphone. **(T-3).**

6.38.4. The PIC or designated aircrew member will brief the crew each radio's configuration and which crew member is "primary" for that radio (i.e., responsible for not missing inbound calls). **(T-3).** All crew members will monitor every in use radio and if unable, will inform the crew prior to turning it off at their station. **(T-3).**

6.38.5. Deviations. Any crew member will immediately advise the PF when observing unannounced deviations from prescribed procedures, heading deviations greater than 10

degrees, airspeed deviations greater than 10 knots, altitude deviations greater than 100 feet during approach or 200 feet while enroute, or potential terrain or obstruction problems and no attempt is being made to correct the deviation. **(T-3).**

6.39. VFR Flight Following. Aircrew should request VFR Flight Following to the maximum extent possible while operating in VFR.

6.40. Communication Instructions for Reporting Vital Intelligence Sightings and Other Reports. Refer to AFMAN 10-206, *Operational Reporting*. Report all vital intelligence sightings from aircraft as indicated in FLIP Planning or FIH.

6.40.1. In-flight harassment or hostile action against aircraft. Aircraft subjected to harassment or hostile action by foreign aircraft will immediately contact the nearest USAF air-to-ground voice facility and report the encounter. **(T-2).** Include aircraft nationality, type, insignia, or any other identifying features; note position, heading, time, speed when harassed, and type of harassment. Request a relay of the report to the nearest C2 agency. Also, attempt to contact the nearest command post when in Ultrahigh Frequency (UHF) and Very High Frequency (VHF) range. **(T-2)**

6.41. In-flight Emergency (IFE) Procedures. Report deviations from directives that occur as a result of an emergency IAW AFMAN 11-202V3 AFSOC Sup and this manual. **(T-3).**

6.41.1. The PF will continue to fly during an emergency. **(T-3).** If not the PIC, the PIC will brief the PF when the transfer of aircraft controls is planned and will take controls prior to landing. **(T-3).**

6.41.2. The PNF should be the primary crew member responsible for executing emergency checklist procedures. Normally the PF will manipulate the power lever, condition lever, and manual override lever. Both pilots will verbally and visually confirm engine failure/fire prior to selecting the condition lever to cut-off/feather and/or the correct emergency handle prior to actuation and will reference the checklist for guidance during the emergency. **(T-3).** The PNF and other crew members should review the AOH as appropriate and as time permits.

6.41.3. The PNF will monitor aircraft airspeed, Angle of Attack (AOA), attitude, angle of bank, gear/flap position, and aircraft maneuvering. **(T-3).** The PNF will immediately inform the PF of any deviations, and will maintain readiness to take the aircraft controls if required to prevent departure from controlled flight. **(T-3).**

6.41.4. Fly no slower than AOA Centered during engine failure operations. ***WARNING:*** Immediately recover from any approach to stall indication by reducing back stick pressure and bank angle to prevent stall.

6.41.5. Notification of Controlling Agencies. As soon as practical after completing the aircraft emergency procedure checklist or critical action procedures, furnish the controlling agency a description and extent of the difficulty, assistance required, intentions, and any further pertinent information. During emergencies, monitor simultaneous UHF and VHF transmissions, if able, when operating in a terminal area under radar control.

6.41.6. Need for Medical Assistance. When a person on board the aircraft requires medical care, the PIC will inform the station of next intended landing in sufficient time so medical personnel may meet the aircraft. **(T-3).** The request will include the individual's gender, approximate age, and the nature of the medical problem.

6.41.7. If an emergency checklist is referenced and it ends with "Land as soon as practical/possible," do not conduct additional training or evaluation events. Events logged during RTB to a full stop may be graded.

6.42. Recovery Procedures.

6.42.1. If diving, adjust power as required while rolling to a wings level, upright attitude, and correct to level flight. Do not add back pressure until less than 90° of bank.

6.42.2. If climbing, use power and bank as required to assist pitch control and avoid negative G forces. As the aircraft approaches the horizon, adjust pitch, bank, and power to complete recovery and establish the desired aircraft attitude. When recovering from a steep climb, care must be exercised to avoid exceeding bank limitations.

6.42.3. Bank and power. During unusual attitude recoveries, unless necessary to avoid a greater emergency, ensure bank and power do not exceed aircraft limitations.

6.42.4. Once recovery is complete, resume any turn or maneuver as required while maintaining aircraft within limitations.

6.42.5. Stall Recovery. Perform a stall recovery at the first indication of stall (stick pusher or natural stall indication) or when directed "RECOVER." Do not continue turns or attempt to maintain planned ground track until the stall is arrested. Terminate simulated emergencies until a full recovery is made. Stall indications any other time of flight will be recovered to safe flying airspeed and debriefed before continued operations. **(T-2).** RECOVER by:

6.42.5.1. Reduce angle of attack. This may require a reduction in back pressure, or moving yoke progressively towards neutral, or moving yoke forward of the trim position.

6.42.5.2. Advance PCL as required to maintain flying airspeed. Anticipate engine power effects, applying aileron and rudder as necessary to maintain or achieve wings level.

6.42.5.3. Use aileron and rudder control as necessary to achieve and maintain wings-level, coordinated flight throughout the recovery.

6.42.5.4. As flying speed is regained, smoothly increase back pressure on the yoke to stop the altitude loss and return to level flight, taking care to avoid entering a secondary, accelerated stall during recovery.

Section 6F—Arrival

6.43. Arrival. Before starting each approach, the PF will brief the procedures to be followed during approach, landing, and go-around/missed approach, as necessary. **(T-3).** Performance data will be reviewed and updated as required. This briefing will be accomplished prior to the completion of the Before Landing Checklist. **(T-3).**

6.43.1. On Time Arrival. Arrivals within 15 minutes of scheduled arrival time are considered on time.

6.44. Instrument Approach Procedures.

6.44.1. Circling Minimums. The U-28 is a Category B aircraft. The PF may fly circling approaches at higher speeds raising the circling minimums to the category for the speed to be

flown. The PF is responsible for briefing speeds and flying the approach according to the correct minimums.

6.44.2. Holding Exception for Remote or Island Destinations. IAW AFMAN 11-202V3 AFSOC Sup, aircrew are authorized to hold for one hour in lieu of an alternate for remote or island destination.

6.44.3. Advisory Calls During Instrument Approaches. The following are mandatory altitude calls made by the PNF:

6.44.3.1. Climb/Descent. "1,000 feet above/below" assigned altitude or flight level.

6.44.3.2. Altimeter settings. Both pilots will state and set the altimeter setting as issued by ATC, weather reporting facilities (e.g., Automatic Terminal Information System (ATIS), Automated Weather Observation System, Automated Surface Observation System, etc.), or when passing a Transition Level or Altitude (e.g., Flight Level 180). **(T-2).**

6.44.3.3. Non-precision Approaches. "100 Above" when 100 feet above Minimum Descent Altitude (MDA) or step down altitude. "Minimums" at MDA. "Runway in sight" when the runway environment is in sight and the aircraft is in a position to execute a safe landing.

6.44.3.4. Precision Approaches. "100 Above" when 100 feet above final approach altitude, glideslope intercept altitude, or Decision Altitude (DA). "Continue" at DA with approach light system visible and the aircraft in a position to execute a safe landing. Do not continue the approach below 100 feet unless the red termination bars or the red side bars are visible and identifiable. "Land" at DA with the runway environment in sight and the aircraft in a position to execute a safe landing.

6.44.3.5. "Go-around" at the missed approach point or below MDA and the runway environment is not in sight, when the aircraft is not in a position to execute a safe landing, when directed by ATC facility, or conditions on the runway will not allow a safe landing (e.g., personnel, equipment, or aircraft on the runway).

6.45. Self-Contained Approaches (SCA). All U-28 variants are authorized to conduct AFSOC-termed SCAs, a MAJCOM Certified Procedure, IAW AFMAN 11-202V3 AFSOC Sup para 7.4.6. U-28 SCA procedures for are a specialized operational mission capability, and not an instrument-related event that must be accomplished under IFR. However, both pilots must meet instrument approach currency requirements IAW AFMAN 11-2U-28V1 and RTM in order to fly SCAs. They will be flown and evaluated using non-precision approach procedures and criteria. **(T-2).**

6.45.1. IMC Approval. Prior to being flown in IMC, each SCA requires a live flyability check in VMC documented on an AF IMT 3992 and OG/CC or COMAFSOF approval through local Stan/Eval channels (IAW AFMAN 11-202V3 para 7.4.6.7).

6.45.2. Construction. Local Stan/Eval-approved U-28 aircrew will develop each procedure using PFPS Approach Planning Tool or X-PLAN. Procedures may also be developed by a TERPS authority. **(T-2).**

6.45.2.1. IAF. The IAF should be no less than 3 miles from the Final Approach Fix (FAF), normally at the 25-mile ESA. Place a holding pattern at the IAF, normally with the IAF as the holding fix, standard turns, with the inbound course equal to the final approach course.

6.45.2.2. FAF. The FAF should be no less than 3 nm from the runway threshold, at an altitude above the MDA normally requiring a 3 degree descent, rounded up to the next 100 ft.

6.45.2.3. Final Approach. The approach is considered a straight-in when it is offset no more than 30 degrees. Circling approaches are authorized, PFPS "Turning" approaches are not. The MDA will be no lower than 300 ft above TDZE. **(T-2).**

6.45.2.4. Final Approach Obstacle clearance. The final approach course primary area is 0.6 nm wide on either side of the course centerline, extending from the FAF to the MAP. The minimum obstacle clearance is 300 ft in the entire primary area (i.e., adhering to the MDA ensures obstacle clearance regardless of descent rate from the FAF to the MDA). Increase MDA, move the FAF, add step down fixes, move the MAP, angle final approach course, etc. to ensure obstacle clearance in the primary area. **(T-2).**

6.45.2.5. Missed Approach. Define a missed approach point no further than the runway departure end. The missed approach procedure should normally consist of a climbing turn to the IAF. Min obstacle clearance throughout the Missed Approach Procedure is 200 ft. **(T-2).**

6.45.2.6. Currency. Update each SCA procedure with the Vector Vertical Obstruction Data (VVOD) update cycle and immediately when aircrew report a new obstacle observed on the approach. If the obstacle causes a change to procedure altitudes or routing an additional VMC flyability check and OG/CC or COMAFSOF approval is required. Show the validity period (VVOD cycle) on the SCA plate. See **paragraph 6.45.7** for further guidance on new obstacles **(T-2).**

6.45.2.7. Weather Requirements. Minimum visibility is no less than 1 sm for all approaches. Minimum ceiling for circling approaches is the MDA's HAT (height above touchdown) rounded up to the next hundred feet. **(T-3).**

6.45.3. Procedure database entry. Enter the named points of the procedure on the ground prior to takeoff. The CSO (if onboard) will read the coordinates from the SCA plate. One pilot will enter each point into either the FMS or GNS, the other pilot will verify. Data reentry is not required if the points have been previously loaded, but they must be verified prior to enroute descent. **(T-3).**

6.45.4. Operation. Fly IAW non-precision approach procedures, including required advisory calls. Check GPS NOTAMs before using the SCA procedure. Ensure RAIM will be available for the entire approach. Force the FMS/GNS into approach mode prior to the FAF (0.3 nm CDI sensitivity). Use all available tools to monitor and validate the SCA throughout the approach. The CSO (if on board) will plot the SCA in SENTRY to monitor the approach. **(T-2).**

6.45.5. System requirements. The FMS or GNS, EGPWS (with current database), TCAS, and an operable radio (for the local CTAF or equivalent) are required during the SCA procedure. **(T-3).**

6.45.6. Procedure errors or new obstacles. Report any procedure errors or new obstacles through local Stan/Eval channels. New obstacles observed by aircrew must be reported through Stan/Eval channels to AFSOC/A3VZ to ensure the obstacle is included in future VVOD updates. Until the obstacle is updated in VVOD units must add the obstacle via manual

CHUM into XPLAN or CFPS/FalconView. After entering the obstacle, unit Stan/Eval will review the procedure in APT to ensure there are no violations to required obstacle clearance. Finally, the unit must report the obstacle to Honeywell to ensure the EGPWS database is updated (see squadron safety).

6.46. Radar Altimeter Procedures.

6.46.1. During VFR operations, the recommended low altitude warning setting is 90 percent of intended or flown cruise altitude.

6.46.2. For instrument approaches, set the radar or barometric altimeter low altitude warning to the appropriate Height Above Touchdown, Height Above Aerodrome, MDA, DA, or Decision Height prior to the Final Approach Fix.

6.47. Maximum Rate descent.

6.47.1. The minimum equipment required for a max rate descent are full flight instrumentation displayed for each pilot, a functional radar altimeter, and an operational altitude/vertical speed preselect.

6.47.2. Briefing Requirements:

6.47.2.1. The descent's start point in mean sea level (MSL) altitude and distance from the arrival airfield.

6.47.2.2. The descent path and relationship to the arrival runway, and whether a descending turn is required and in which direction.

6.47.2.3. The “pullout” altitude in both AGL and MSL, which will be no lower than 2,000 ft. AGL.

6.47.2.4. The "level off" altitude in both AGL and MSL and the expected distance from the arrival airfield. The level off altitude will be 1,000 ft. AGL or the arrival airfield’s pattern altitude, whichever is greater.

6.47.2.5. The location and altitude of the high terrain threat along the projected aircraft ground track during the maneuver.

6.47.3. Procedure Limitations.

6.47.3.1. The barometric minimums pointer will be set to the pullout altitude. **(T-3).** The altitude/vertical speed preselect will be set to the level off altitude. **(T-3).**

6.47.3.2. The PNF will call “radar altimeter alive”, “2,000 feet above” and “1,000 feet above,” the level-off altitude. **(T-3).**

6.47.3.3. The PF will begin to arrest the descent at a minimum of 1,000 ft. above level off altitude. **(T-3).**

6.47.3.4. Aircraft pitch will not exceed -25 degrees and bank angle is limited to 45 degrees (at night) and 60 degrees (during the day) throughout the maneuver. **(T-2).**

6.47.3.5. The PNF will cross check the primary flight instrumentation with the visual picture outside the aircraft. **(T-3).**

6.47.3.6. The CSO will back up the altitude calls of the PNF. **(T-3).**

6.48. Landing Operations.

6.48.1. Touch-down, Go-Around, and Decision Point. The PF aircraft will brief an identifiable reference point for the touchdown, go-around, and touch-and-go decision point on all runways NLT during the Before Landing checklist's crew brief. Examples include runway markings, lights, crossing taxiways, buildings, tree lines, and timing. **(T-2).**

6.48.1.1. Go-Around Point. The go-around point will be no closer to the departure end of the runway than the calculated landing ground roll (recommend using without reverse data unless operationally required to use with reverse). **(T-2).** Departure obstacles must also be considered when determining the go-around point. **(T-2).**

6.48.1.2. Touch-and-Go Decision Point. The touch-and-go decision point will be no closer to the departure end of the runway than the greater of either the 15 flap calculated takeoff or landing ground roll (without reverse). **(T-2).**

6.48.2. Go-around. If the aircraft is not on the ground by the pre-briefed go-around point, or if any crew member calls "Go-around," the PF will immediately execute a go-around. **(T-2).** Forcing the aircraft onto the runway by lowering the nose, especially with airspeeds in excess of V ref, may result in touching down nose wheel first and/or the propeller contacting the landing surface.

6.48.3. Touch-and-go and Stop-and-go Requirements. For touch-and-go, continue takeoff or full stop NLT than the briefed touch-and-go decision point. For stop-and-go, the available runway remaining must meet takeoff runway requirements per 5.8.4. **(T-2).**

6.48.3.1. Stop-and-go or touch-and-go operations require:

6.48.3.1.1. Two qualified pilots or an IP if the other pilot is unqualified or noncurrent. **(T-2).**

6.48.3.1.2. Ceiling and visibility must be at least 300 feet and ¾ mile. **(T-1).**

6.48.3.1.3. Crosswinds less than or equal to 75% of the maximum demonstrated crosswinds listed in the AOH when the runway is wet or snow covered. **(T-2).**

6.48.3.2. Stop-and-Go or Touch-and-Go operations are prohibited on icy runways. **(T-2).**

6.48.4. Landing Airspeeds. Reference Landing Speed (Vref) will be calculated and briefed before landing. **(T-3).** Pilots will not fly slower than AOA Centered until established on final and preparing to land. **(T-3).**

Section 6G—After Landing

6.49. Maintenance. Complete aircraft maintenance forms after each flight.

6.49.1. Flaps. When operating into an airfield where maintenance support is unavailable aircrew can elect to leave the flaps in the takeoff position configuration, i.e., 15 flaps, instead of retracting them to zero.

6.49.2. Aircraft Post Flight. Crews will ensure the aircraft is left clean. **(T-3).** Remove all trash, equipment, and personal belongings from the aircraft. Return mission equipment to their normal stowed configuration (e.g., computer keyboards in storage bin, hand controllers mounted, etc.). Crews should lower seats, extend rudder pedals, and loosen seatbelts.

6.49.3. Maintenance Discrepancy Reports (DRs). Aircrew will describe issues in detail and include as much information as possible on DRs to aid maintenance in repairs. **(T-3).** Crews will debrief the DR with maintenance personnel before departing. **(T-3).** In order to remain compliant with FAA regulations, aircrew members will not scribble out words in a maintenance write-up. **(T-3).** Correct errors by lining through them with a single line and initial. At locations where there is no maintenance personnel and maintenance support is required, the PIC will ensure a thorough debrief is provided to the MC or command post prior to entering crew rest. **(T-3).**

6.49.4. When transiting installations, the PIC will establish a point of contact with the base operations or FBO for overnight billeting. **(T-3).** The PIC will be immediately notified in the case of incident or emergency affecting the safety or security of the aircraft. **(T-3).**

6.50. Crew Debriefing.

6.50.1. Training Missions. The PIC will conduct the debriefing session and complete the appropriate documentation. **(T-3).** The PIC will ensure all applicable information is passed to controlling agencies. **(T-3).**

6.50.2. Combat Operations. Each aircrew participating combat operations will participate in an intelligence and mission debriefing session. **(T-2).**

6.50.3. Aircrews should ensure the SQ/CC, DO, or MC is debriefed immediately following a combat or combat support mission during which any tactics or procedures were observed that may affect other operations.

6.50.4. PICs encountering hostile fire will submit an immediate airborne report to their controlling agency followed by a hostile fire incident report to intelligence immediately after landing. **(T-2).**

6.50.5. Other Missions. The PIC has the responsibility of affording to each crew member the opportunity to discuss unusual aspects of the mission. Debriefings may be formal or informal, as the situation requires.

6.51. Impoundment. If an aircraft is involved in a ground or in-flight incident, the PIC should impound the aircraft immediately and contact the Unit CC, DO, or appropriate controlling agency for further instructions. **(T-3).**

6.52. Clearwater Rinse Facility (Birdbath). Aircrew will not use Clearwater Rinse facilities in order to prevent damage to the aircraft. **(T-3).**

6.52.1. An entry will be placed in the aircraft maintenance forms, “Aircraft Subjected to Salt Spray” anytime the aircraft is flown over salt water below 1,000 feet AGL, except for takeoffs and landings. **(T-3).** Document the lowest altitude and duration the aircraft was subjected to salt spray.

6.53. Customs, Immigration, and Agriculture Inspections.

6.53.1. Complete customs, agriculture, and public health clearance forms, as required, prior to opening any doors other than the crew door or enplaning and deplaning personnel.

6.53.2. Proceed directly from the aircraft to customs, immigration, or agricultural inspection for processing at those stations where federal or local inspections are required. The PIC or designated representative completes the necessary forms before reporting to inspectors.

6.53.3. After clearing with border clearance agencies, the PIC or designated representative will return to the aircraft for offloading and other post-flight procedures. **(T-3).**

6.53.4. The PIC will not authorize search, seizure, inspection, or similar exercises of jurisdiction enumerated above by foreign authorities except by direction of HQ USAF or the American Embassy in the country concerned. **(T-0).**

6.53.5. PIC will not permit the inspection of their aircraft by officials of any foreign government. **(T-1).** If requested to do so, the PIC and crew will deny access and seek aid from the senior AFSOC or USAF representative or US Embassy or consulate within the host nation. **(T-1).** Inform customs or other officials of the above guidance and request that they confirm their request through their own government and with US Department of State representatives. If necessary, the aircrew will seal the aircraft and enter into crew rest, and relay departure intentions, until resolution of the matter by appropriate authority. Use communications by the fastest means available to inform command and control facilities should this situation occur.

6.53.6. When confronted with a search request by foreign authorities, aircrews should consider the following procedures:

6.53.6.1. In most cases, search attempts may be stopped by a statement of the PIC to the foreign officials that the aircraft is a sovereign instrument not subject to search without consent of HQ USAF or the chief of mission in the country concerned. This should be clearly conveyed in a polite manner so as not to offend foreign authorities that may honestly, but mistakenly, believe they have authority to search USAF aircraft.

6.53.6.2. If foreign authorities insist on conducting a search, the PIC must negotiate to delay the search until contact is made with HQ USAF or the appropriate embassy (US or other friendly nation). The PIC should unequivocally state, the aircrew has no authority to consent to the search and that they must relay the foreign request to these agencies for decision. The PIC should then notify these agencies of the foreign request by the most expeditious means available. Thereafter, the PIC should follow instructions provided by the appropriate embassy and HQ USAF.

6.53.6.3. If foreign officials refuse to desist in their search request, the PIC should indicate that they would prefer to fly the aircraft elsewhere (provided fuel and mechanical considerations permit a safe departure) and request permission for immediate departure.

6.53.6.4. If permission is refused and the foreign authorities insist on forcing their way on board an aircraft, the PIC should state that he protests the course of action being pursued and that he intends to notify both HQ USAF and the US Embassy of the foreign action. The PIC should then allow the foreign agents on board the aircraft, without physical resistance, and thereafter report the incident to HQ USAF and the US Embassy as soon as possible. **(T-1).**

6.53.7. In all instances, specific instructions may be briefed because of sensitive cargo or equipment. These instructions and applicable provisions of classified supplements to the foreign clearance guide should be followed where applicable.

Section 6H—Miscellaneous

6.54. Electronic Devices. The use of electronic devices is specified in AFMAN 11-202V3 AFSOC Sup. For electronic devices not listed, the user will provide the aircrew a letter from the Aeronautical Systems Division, Deputy for Engineering (ASC/ENAE) certifying the device is approved for airborne use. **(T-2).** If the aircrew detects any interference from an electronic device used aboard the aircraft, discontinue the use of this device for the duration of the flight.

6.55. Jamming and Interference. All aircrews and other radio users must be familiar with the procedures for reporting incidents of Meaconing, Intrusion, Jamming, and Interference (MIJI) or Spectrum Interference (SI). Info AFSOC/A3TW on all MIJI/SI reports. **(T-2).**

6.56. Utilization of Civilian Law Enforcement or Medical Personnel. Generally, before transporting civilian law enforcement officials or civilian medical personnel, obtain proper authorization through OG/CC or COMAFSOF and a legal review by the servicing staff judge advocate to ensure compliance with applicable law and DoD policy. Commanders will not transport civilian law enforcement personnel into areas of imminent danger or where confrontation with civilian criminal targets is likely, will not use military force against civilian criminal targets unless in self-defense, and will not direct the action of civilian authorities in enforcing the law or making arrests. **(T-3).**

6.56.1. Civilian Law Enforcement Support. It is the policy of the DoD to cooperate with civilian law enforcement officials to the maximum extent practicable, within the limitations of federal law and DoD policy. AFI 10-801, *Defense Support of Civil Authorities*, incorporates the appropriate directive and provides uniform policies and procedures service members must follow when supporting federal, state, and local civilian law enforcement agencies. It establishes specific limitations and restrictions on the use of Air Force personnel, equipment, facilities, and services by civilian law enforcement organizations. Report all requests for assistance and coordinate all requests from civilian law enforcement authorities through the appropriate C2 channels.

6.57. Hazardous Material Procedures. The term "hazardous material" includes any material, which, because of its quantity, properties, or packaging, may endanger human life or property. These procedures apply whenever aircraft carry DoD Hazard Class/Division 1.1, 1.2, 1.3, or 1.4 explosives, oxidizers, compressed gases, flammable solids and liquids, and corrosive liquids, Department of Transportation (DoT) Class A and B poisons, etiological or biological research materials, radioactive materials requiring yellow III labels, and inert devices. **(T-1).** DoD Hazard Classes/Divisions are listed in AFMAN 24-204(I), *Preparing Hazardous Materials for Military Air Shipment*.

6.57.1. Briefing Agency Requirements. Reference AFMAN 24-204(I) for briefing requirements.

6.57.2. Cargo Documentation. Do not accept hazardous materials unless proper documentation, certification, and identification of cargo is provided. This includes transportation control number entered correctly on both the cargo manifest and the Shipper's Declaration for Dangerous Goods. **(T-2).**

6.57.3. Flight Planning. The PIC (unless specifically briefed otherwise):

6.57.3.1. Enters “Hazardous Cargo” and the mission number in the appropriate section of the flight plan. Use remarks section of DD Form 175 information section of DD Form 1801, or ICAO Flight Plan Form.

6.57.3.2. Plans the flight to minimize over-flying heavily populated or otherwise critical areas.

6.57.3.3. Prepares a departure message. The remarks section of the departure message should include the following:

6.57.3.3.1. DoT class and DoD hazard class or division, if applicable, of hazardous material on board (include net weight of DoT Class A or B poisons and net explosive weight of Class A or B explosives).

6.57.3.3.2. Request for special support (e.g., isolated parking, security, technical escort teams, etc.).

6.57.3.3.3. Inert devices (when applicable).

6.57.3.4. If ETE is less than 1 hour, or if other circumstances preclude timely receipt at destination, notify base operations at the first intended landing, by priority telephone.

6.57.4. Before Engine Start. Ensure placards are removed. Give the controlling agency parking location, approximate engine start time, and verify that the firefighting agency has the hazardous materials information. If not, request the following be relayed to the firefighting agency:

6.57.4.1. DoT class of hazardous material on board and the DoD hazard class or division for explosive material on board.

6.57.4.2. Net Explosive Weight.

6.57.4.3. Request for isolated parking (if necessary).

6.57.4.4. Estimated time of departure.

6.57.5. Enroute. Normal procedures apply. Avoid over-flying heavily populated or otherwise critical areas.

6.57.6. Before Landing. Accomplish the following unless specifically prohibited by the theater commander or FLIP planning:

6.57.6.1. Contact the base operations dispatcher, control tower, approach control, or other agency specified in FLIP at least 30 minutes (or as soon as practical) before ETA to announce that hazardous materials are on board and to verify that the appropriate base support agencies have received the departure message. If not, transmit the mission number, ETA, and information.

6.57.6.2. If landing at a CONUS civil airport without a tower, give the previous information to the nearest FAA flight service station.

6.57.6.3. Request the information be relayed immediately to base operations or the civil airport manager, crash or fire protection agency, and other support agencies.

6.57.7. Parking:

6.57.7.1. DoD requires aircraft carrying DoD Hazard Class or Division 1.1, 1.2, 1.3 explosives, DoT Class A poisons, and certain biological agents and munitions be parked in areas isolated from personnel. The PIC is responsible for ensuring cargo is correctly identified to the tower and ground control. When aircraft are not directed to an isolated area, identify the cargo again to tower or ground control. **(T-1).** When identification is acknowledged, the host is solely responsible for selecting the parking area. Should host procedures be questionable, submit trip reports, as appropriate, to document such occurrences.

6.57.7.2. The military host is responsible for ensuring aircraft are properly placarded. For non- military installations, the briefing to the PIC will include placard requirements and, if required, placards will be furnished at the onload base. **(T-1).** The shipper must make prior arrangements with the airport manager for shipments of hazardous materials requiring placards. The shipper is responsible for cargo identification, firefighting procedures, and isolated parking requirements.

6.57.8. Unscheduled Landing Due to IFE. Transmit unclassified information to the appropriate air traffic control facility as follows:

6.57.8.1. Nature of emergency and intent to land.

6.57.8.2. Aircraft position and ETA.

6.57.8.3. Number of personnel and location in aircraft.

6.57.8.4. Fuel on board.

6.57.8.5. That hazardous materials are on board, location of the cargo, and applicable information.

6.57.8.6. After Unscheduled Landing. Contact the AFSOC Command Center or COMAFSOF by telephone, radio, or message, giving arrival notice, hazardous materials information, and other pertinent information as required.

6.58. Hazardous Medical Equipment.

6.58.1. Nonstandard equipment possessed by medical facilities that use AFSOC air evacuation services should be regarded as potentially hazardous. Two types of equipment are of major concern:

6.58.1.1. Electronic medical equipment produces electromagnetic interference which is commonly beyond the limits specified by Military Standard (MIL STD) 462D, *Measurement of Electromagnetic Interference Characteristics*" and therefore can interfere with aircraft communication and navigational equipment.

6.58.1.2. Therapeutic oxygen systems present an increased hazard of fire or explosion. A potential hazard is the inadvertent disruption of the cylinder neck, manifold, or regulator resulting in explosion and propulsion of the container or accessories.

6.58.2. For nonstandard electronic medical equipment, take the following precautions:

6.58.2.1. Pararescue or aeromedical evacuation personnel must inform the PIC when nonstandard electronic medical equipment is brought on board the aircraft. **(T-3).**

6.58.2.2. The PIC must be informed of the anticipated period of use of the equipment during the mission. **(T-3).**

6.58.2.3. The PIC must be alert for any interference with aircraft communications or navigation equipment during periods of use of this equipment. **(T-3).**

6.58.2.4. When continuous use of the equipment is required throughout the duration of the mission, flight must be restricted to VFR conditions. **(T-3).** Furthermore, exercise additional caution on night VFR missions to ensure there are no adverse effects on navigational equipment.

6.58.3. For nonstandard oxygen equipment, take the following precautions:

6.58.3.1. All compressed oxygen equipment with exposed, unprotected cylinder neck, manifold, or regulator must be completely secured from all movement in its longitudinal and lateral axes. **(T-3).**

6.58.3.2. Pararescue or aeromedical evacuation personnel must continually monitor the operation of the equipment to detect possible malfunction during exposure to altitude. **(T-3).**

6.59. Dropped Objects. During aircraft exterior visual inspections, pay particular attention to surfaces, panels, and components, which could potentially be dropped objects. If a dropped object is discovered and the mission is continued, the PIC will:

6.59.1. Ensure documentation is entered into the aircraft maintenance forms. **(T-3).**

6.59.2. Notify the controlling agency as soon as practical. **(T-3).** Include route of flight, altitude, and weather conditions encountered and approximate coordinates of dropped object event.

Chapter 7

AIRCRAFT SECURITY

7.1. General. This chapter provides guidance for aircraft security on the ground and inflight. The U-28 EQ and EQ+ are a Protection Level "3" resource, the U-28 Trainer is a Protection Level "4" resource. This security priority designation applies to operational aircraft, wherever they are located, worldwide. Some aircraft contain equipment and documents that require protection per DoDM 5200.01, *DoD Information Security Program; Protection of Classified Information*, DAFI 31-101, *Integrated Defense*, and AFI 31-401, *Information Security Program Management*.

Chapter 8

MISSION EMPLOYMENT

8.1. Terminal Operations. Execute IAW this publication, AFMAN 11-202V3 AFSOC Sup, and AFTTP 3-1. U-28.

8.2. Tactical Operations. Execute the proper tactical procedure based upon threat analysis and aircraft performance. For all tactical operations, follow theater specific ATC procedures.

8.2.1. Radio Communication. The PIC will plan and brief individual responsibilities for secure communication loading, voice radio configuration, and communication during the mission. **(T-3).** Coordination between all aircrew members is essential for safe and effective mission accomplishment. All aircrew members that have the capability to monitor radios must be alert to back up the assigned crew members when duties allow. **(T-3).** The PIC will assign radio monitoring and transmission duties after examining each phase of flight for mission requirements and individual workload. **(T-3).**

8.2.2. Preparation for NVG Operations. Cockpit and cabin lights may be taped or covered with NVG compatible film if they will interfere with NVG operations and cannot be otherwise disabled without removing aircraft power (e.g., pulling circuit breakers). Landing gear indicators will not be covered with tape. **(T-3).**

8.2.3. Tactical Departures and Arrivals will be flown IAW **AFTTP 3-3. U-28. (T-3).**

8.2.4. Extended operations (orbits) above densely urbanized, densely forested, maritime, or mountainous objective areas outside of glide distance from a suitable emergency landing surface require an additional level of Operational Risk Management. Crews and/or planners will identify all planned objective areas that are outside of glide distance to a suitable emergency landing surface to the SQ/CC or SQ/DO for final risk acceptance and approval of any selected risk management factors. **(T-3).**

8.3. Aircraft Navigation Systems.

8.3.1. GPS approaches. The U-28 and aircrew are approved and authorized to use GPS for Performance Based Navigation (PBN) operations requiring RNAV or RNP in airspace requiring RNAV-10, RNAV-5, RNAV-2, RNAV-1, B-RNAV, P-RNAV, RNP-10, RNP-5, RNP-4, RNP-2, RNP-1, RNAV, and Oceanic and Remote Area of Operations IAW the U-28 Aircraft Operating Handbook (AOH). They are also approved to conduct RNP terminal departure and arrival procedures IAW the U-28 AOH, including instrument approaches to the published Lateral Navigation (LNAV), Localizer Performance (LP), or RNP approach minimums. EQ+ and EQ variants are also certified to conduct LPV approaches.

8.3.2. Garmin GNS-430 Databases. Aircrew will ensure the Americas Database is installed for CONUS flights and the International Database is installed for OCONUS flights. **(T-3).** The Worldwide Database must only be used for ferry flight operations because it does not contain any airfields with a max runway length less than 4,000 feet. **(T-3).** If the incorrect database is loaded, crews may continue provided they do not require its use, and will document the discrepancy in the maintenance forms.

8.3.3. Global Positioning System (GPS) Navigational Systems. The U-28 is not compliant with the Communications, Navigation, Surveillance and Air Traffic Management (CNS/ATM) architecture.

8.4. Landing Zone Operations. Only fully mission qualified aircrews or those receiving instruction are authorized to operate IAW this section. Use normal takeoff and landing procedures whenever able.

8.5. Landing Zone Assessment.

8.5.1. Mission operations may necessitate changes. Carefully evaluate aircraft capabilities and the mission environment before the operation. In addition to the requirements stated in **chapter 5**, consider the following:

8.5.1.1. Security of the operating area.

8.5.1.2. Terrain and obstacle features along the approach or departure path.

8.5.1.3. Runway surface conditions (e.g., dirt, grass, dust, small holes, damaged Pierced Steel Plank, smooth, rough, etc.).

8.5.1.4. Surface temperature and density altitude.

8.5.1.5. Usable runway length and width.

8.5.1.6. Surface acceleration and deceleration factors (e.g., soft, dry, wet, ice, slope).

8.5.1.7. Actual and predicted gross weight of aircraft.

8.5.1.8. Surface winds (e.g., headwind, tailwind, crosswinds, gusty, turbulence).

8.5.1.9. Number of takeoffs and landings required.

8.5.1.10. Ground Plan (e.g., ERO, vehicles, marshalling, onload/offload locations, etc.).

8.6. Landing Zone Arrival. Plan arrival altitudes to minimize conflict with terrain or other airborne traffic.

8.7. Landing Zone Traffic Pattern. When the environment permits, fly normal traffic patterns. Terrain may require significant modifications to normal traffic patterns.

8.8. Landing Zone Specific Aircrew Procedures. Aircrew will adhere to the following procedures in addition to the normal procedures in the AOH: **(T-3)**

8.8.1. Turn off the Environmental Control System (ECS) as required (e.g., dusty, loose grass).

8.8.2. During the final stage of landing roll, reduce reverse thrust to prevent debris from causing a restriction to visibility or engine damage.

8.8.3. Do not land if the LZ is not properly identified or an abort signal is given.

8.8.4. Brief the ground party and subsequent aircrews on any unexpected hazards encountered during takeoff or landing.

8.8.5. If the aircraft is not on the ground by the pre-briefed go-around point, the crew will immediately execute a go-around. **(T-3).** Forcing the aircraft onto the runway by lowering the nose, especially with airspeeds in excess of Vref, may result in touching down nose wheel first and/or the propeller contacting the landing surface.

8.9. Laser Usage. Lasers will always be employed IAW established tactics, theater specific ROEs and SPINs. **(T-3).** Prior to employing a laser, aircrew members should make every attempt to notify the crew. At no time will any laser be fired over the horizon. **(T-3).**

8.9.1. Safety. The nominal ocular hazard distances for all U-28 lasers are detailed in the Aircrew Operators Handbook. For training missions, adhere to all NOHDs unless ground personnel in the vicinity have been notified and have taken appropriate safety precautions. Any crew member observing adverse weather conditions (i.e., clouds, smoke, etc.) that may cause laser energy to be reflected back into the aircraft should notify the crew immediately if laser operations are planned.

8.9.2. Laser Arming. The aircraft commander will arm lasers individually. **(T-3).** Prior to arming, the crew member will state which laser they have selected. **(T-3).**

8.9.3. Laser Usage during Training Missions.

8.9.3.1. Laser Range Finder (MTS-A). The eyesafe laser range finder (ELRF) may be employed during any training mission.

8.9.3.2. Training Laser. The training laser may be used during any training mission.

8.9.3.3. Visible Laser. The visible laser will not be employed outside the boundaries of a military installation or range. **(T-3).** The visible laser will not be employed inside the airspace of an active military airfield without clearance from the airfield controller (tower, LZC, etc.). **(T-3).**

8.9.3.4. Laser Target Marker (LTM)/Laser Illuminator (LI). The LTM/LI will not be employed outside the boundaries of a military installation or range. **(T-3).** During training, the aircrew should limit the exposure of any person, vehicles, or buildings to the greatest extent practicable. Due to the potential distraction to NVG operations, the LTM/LI will not be employed at night inside the airspace of an active airfield without clearance from the airfield controller (tower, LZC, etc.). **(T-3).** The SQ/CC is the waiver authority for employing the LTM/LI outside the boundaries of a military installation or range.

8.9.3.5. Laser Range Designator (LRD). The LRD will only be fired on laser-approved ranges. **(T-2).** If ground parties are present they will be advised prior to laser arming to ensure they have taken safety precautions. **(T-2).**

8.10. Flares. If flares have been dispensed during flight, a hung flare check must be accomplished upon next landing. **(T-3).** The PIC will deplane a crew member or have ground personnel visually inspect dispensers to ensure that there are no hung flares. **(T-3).** If a hung flare is detected, follow local airfield hung flare procedures. If hung flare procedures do not exist at stopping location, park the aircraft 300 feet away from other aircraft, flight line equipment, or personnel.

8.10.1. A hung flare is a flare that has partially fired or is extended from the magazine. Missing flare endcaps should not be considered hung flares.

8.10.2. Dispense flares IAW controlling agency procedures and restrictions. Follow regulations for local agency notification prior to flare usage.

Chapter 9

TRAINING

9.1. General. See AFMAN 11-202V1, *Aircrew Training,* and AFMAN 11-2U-28V1, *U-28 Aircrew Training*, for additional information.

9.2. Training Aircraft Not Capable of Flight. If an aircraft is not capable of departure within 4 hours after scheduled departure time, cancel the training mission unless waived by the PIC. Departure consists of actual takeoffs for assigned or planned training missions and does not include maintenance ops checks.

9.3. Defensive Maneuver Training. Pilots will make advisory calls to the aircrew prior to beginning the evasive maneuver. **(T-3).** Crew members will clear the aircraft of obstacles throughout the maneuvering. **(T-3).**

9.4. Simulated Instrument Flight.

9.4.1. The use of a hood or other artificial vision-restricting device is not authorized for any phase of flight. **(T-2).**

9.4.2. Initiate practice instrument missed approaches no lower than the minimum altitude for the approach being flown.

9.5. Confidence Maneuvers. All confidence maneuvers will be accomplished in VMC conditions with a discernable horizon. **(T-3).** Ensure the airspace around the aircraft is clear of traffic by visually clearing the area prior to the maneuver. Do not exceed aircraft limitations.

9.5.1. Approach to Stall Series. An IP at a set of flight controls is required to perform this maneuver. Begin approach to stall series at least 5,000 feet AGL or 5,000 feet above the clouds, power must be in IDLE, and enter the stall series no faster than 1 knot/second. **(T-2).** Recover from the stall at the first approach to stall indication (i.e., stick shaker) using the stall recovery in 6.42.2. **(T-2).** Recover no lower than 1,000 feet below entry altitude. **(T-2).**

9.5.1.1. Traffic Pattern Stall Series. Practice stall recovery in situations mirroring downwind (flaps 15, gear down, level nose-high stall), overshooting base turn (flaps up, gear down, accelerated stall), undershooting base turn (flaps 40, gear down, turning nose-high stall).

9.5.1.2. EOLP Stall Series. Practice EOLP stalls to instruct recovery throughout the EOLP maneuver. For EOLP stalls, recover by decreasing pitch and bank only enough to maintain AOA centered, but remain on EOLP ground track. EOLP stall series includes; glide to high key (level stall), high key to low key (turning), and turn back stalls. **(T-2).**

9.5.2. Pusher Demo. FTU instructors may continue stall series to pusher activation. In addition to the 9.5.1. entry restrictions, the aircraft must be gear up, flaps up, PCL-IDLE, wings level, and stall speed must be calculated prior to entry. **(T-2).** Recover as soon as the pusher activates using the stall recovery, NLT Vs-1 kt. Do not use the pusher interrupt button.

9.5.3. Steep Turns. Accomplish steep turns at least 1,500 feet AGL or 1,500 feet above the cloud deck." Accomplish both 45° and 60° bank steep turns. Do not exceed 60° of bank.

9.5.4. Spins. Intentional spins are prohibited.

9.5.5. Slow Flight. Accomplish slow flight at least 1,500 feet AGL or 1,500 feet above the cloud deck. Fly an airspeed equal to AOA Slow Diamond for the given flap setting. Do not exceed 15 degrees of bank. Recover immediately upon receiving approach to stall indications (shaker or natural).

9.5.6. Acrobatics. Acrobatics and aerobatics are prohibited.

9.5.7. Unusual Attitude Recovery. An IP at a set of flight controls is required to perform this maneuver. Aircraft must be at least 5,000 feet AGL or 5,000 feet above the clouds at the initial setup for the unusual attitude recovery. **(T-2).** The IP will create the scenario, remain within aircraft pitch, bank, and airspeed limitations, provide a positive transfer of controls to the student, and ensure the recovery remains within aircraft limitations. **(T-2).** Minimum recovery altitude is 1,000' below entry altitude. **(T-2).**

9.6. Simulated Emergency Procedures.

9.6.1. Practice simulated emergencies which require placing switches in other than their normal position or the aircraft in an abnormal configuration as specified in the aircraft manual only during training, evaluation, or currency flights when an IP or evaluator pilot is in one of the pilot seats. Pusher interrupt will only be used during an actual inadvertent pusher emergency, any other use of the pusher interrupt is prohibited. **(T-2).**

9.6.1.1. Follow the procedures in 6.41. for simulated emergencies.

9.6.1.2. IP candidates who occupy a pilot seat and are under the supervision of a flight examiner pilot, not in the seat, may perform simulated emergency procedures during upgrade evaluations to IP.

9.6.1.3. Preface all simulated emergencies with the word “simulated.” Do not pull circuit breakers to simulate emergencies. Doing so may induce actual system degradation and unnecessary circuit breaker wear.

9.6.1.4. Use a realistic approach and do not compound emergencies. Limit simulated emergencies to noncritical phases of flight when possible. Notify the controlling agency if a nonstandard traffic pattern or pattern requiring special sequencing is anticipated. Discuss any planned simulated engine emergency procedures during the aircrew brief, including applicable checklists, termination criteria, and recovery procedures.

9.6.2. Simulated Flame Out (SFO). Practice SFOs only under VMC conditions with an instructor or evaluator pilot in one of the pilot seats.

9.6.2.1. The IP will study the terminal or off-airfield area for hazards and obstacles prior to the mission and maintain a visual scan throughout the maneuver. **(T-3).**

9.6.2.2. The IP will initiate the SFO. **(T-3).** The IP will move the PCL to a power setting equivalent to a feathered propeller once the PF verbalizes the proper actions for feathering and may make adjustments throughout to maintain simulated feather. **(T-3).** This is not a transfer of controls, the PF retains control of the PCL and may conduct a go-around or recovery at any point.

9.6.2.3. Practice Engine Out Landing Pattern (EOLP).

9.6.2.3.1. Initiate simulated engine failure no lower than 1000 feet AGL.

9.6.2.3.2. Entry parameters. The aircraft will be no slower than AOA Centered for its configuration at the beginning of the practice EOLP. **(T-2).**

9.6.2.4. Practice Turn back SFO.

9.6.2.4.1. Practice Turn Backs are prohibited in the aircraft. **(T-2).**

9.6.2.5. Practice Straight-Ahead SFO.

9.6.2.5.1. Initiate simulated engine failure no lower than 1000 feet AGL.

9.6.2.5.2. Entry parameters. The aircraft will be at least 120 KIAS flaps and gear up, or 95 KIAS with flaps 15º and gear as required. **(T-2).**

9.6.2.5.3. Terminate straight-ahead SFOs per 9.6.2.8., not lower than 200 feet AGL during the day and 500 feet AGL at night.

9.6.2.6. Off-Airfield EOLP.

9.6.2.6.1. Entry parameters and minimum initiation altitude are IAW EOLP above.

9.6.2.6.2. Only accomplish in VMC under VFR. NVGs must be used during nighttime and illumination must be 20% or better. **(T-2).**

9.6.2.6.3. Terminate the off-airfield EOLP as required per 9.6.2.8, no lower than 500 feet AGL. **(T-2).**

9.6.2.7. Downwind EOPLs, as defined in the AOH Vol 1 are prohibited in the aircraft.

9.6.2.8. SFO Termination Criteria. SFOs will be performed to a go-around except as noted below. **(T-2).** If in a safe position to land, the IP is responsible for directing "GO-AROUND" no lower than the maneuver's floor, 100 feet AGL (200 feet AGL for copilots). **(T-2).**

9.6.2.8.1. If there is excess airspeed upon reaching the floor, the IP may direct the PF to "LEVEL-OFF" there for energy analysis. The IP will direct "GO-AROUND" early enough that while airspeed is decreasing, the aircraft does not slow below AOA centered. **(T-2).**

9.6.2.8.2. The IP (or any crewmember) will terminate the SFO by commanding "RECOVER" if at any point during the maneuver the aircraft limitations are exceeded, a stall is indicated (natural or by shaker), or if continued maneuvering would not result in a safe landing. **(T-2).**

9.6.2.8.3. Terminate simulated emergencies when an actual emergency arises.

9.6.2.9. EOLPs (not other SFO maneuvers) may be flown to a landing at the formal training unit (FTU) with an IP occupying one of the pilot seats. AC and IP students may fly the EOLP to a landing. EOLP landings will not be performed by initial qualification students but may be demonstrated. **(T-2).** IPs may land from EOLPs to maintain currency and proficiency. The following additional restrictions apply if EOLPs are flown to a landing: 31

9.6.2.9.1. Day only.

9.6.2.9.2. Minimum 6,000 foot runway.

9.6.2.9.3. Planned touchdown no closer than 1,000 feet from the runway threshold.

9.6.2.9.4. Emergency landing pattern will be entered through high or low key and flown as described in the U-28 AOH. **(T-2).**

9.6.2.9.5. The IP will direct a go-around at 100 feet AGL if the aircraft is not stabilized in a safe position to land, the airspeed is slower than AOA Centered, or the landing gear does not indicate down, three green. **(T-3).**

9.6.3. Practice Aborted Takeoff. Authorized during day or night VMC, with or without NVGs. Crosswind component must not exceed 75% of the maximum demonstrated crosswinds listed in the AOH. **(T-2).** The runway must be dry, a minimum width of 60 feet, and long enough to meet normal takeoff distance requirements. **(T-2).**

9.6.4. When practicing Manual Override Lever (MOR) operations, the IP will ensure the MOR is properly secured after touchdown before power is applied using the PCL. **(T-2).**

9.6.5. Precautionary Engine-out Landing (PEL). Conduct PEL training IAW SFO training procedures in **para 9.6.2**.

9.7. Mission Training. Mission Scenario Planning. White Cell, Opposing Force (OPFOR), or the instructor are responsible for creating and managing the mission scenario. If unavailable, the most experienced crewmember will be responsible. Other crewmembers may request to create and manage the scenario under supervision to gain experience. **(T-3).**

9.7.1. The PIC should coordinate with the mission planner to develop a scenario that meets the training requirements of all participants. Include at a minimum: communications plan, specific mission events, and air player/ground party deconfliction.

9.7.2. Aircrew will not plan an LPS or IQ evaluation during a mission training or evaluation sortie without SQ/DO approval. **(T-3).** Full mission profiles combined with full pilot CT profiles on the same sortie require an additional level of ORM. Limited pilot CT before or after the mission scenario is allowed.

Chapter 10

LOCAL OPERATING PROCEDURES

10.1. General.

10.1.1. Units will publish local and unique unit operating procedures. **(T-3).**

10.1.2. Local procedures will not be less restrictive than those contained in this publication. Procedures may include, but are not limited to the following:

10.1.2.1. Local terrain and weather rules.

10.1.2.2. Local area flying procedures.

10.1.2.3. Taxi or parking plans, etc.

10.1.2.4. Evacuation or dispersal plans.

10.1.2.5. Training or operational landing sites.

10.1.2.6. Noise abatement procedures.

10.1.2.7. Standard briefing items and terminology.

10.1.2.8. Standard mission folder/kneeboard items.

10.1.2.9. Mission planning factors.

10.1.2.10. Copies of local Standard Operating Procedures will be distributed to all affected aircrew members. Forward the local **Chapter 10** to AFSOC/A3V.

Chapter 11

COMBAT SYSTEMS OFFICER SPECIFIC OPERATIONAL GUIDELINES

11.1. General. In addition to the duties established in the AOH and other directives for U-28 aircraft requiring a CSO, the CSO will comply with the procedures and duties in this chapter. **(T-3).** These items need not be briefed and will be performed as normal procedures. The PIC may assign other duties as necessary.

11.2. Preflight Duties.

11.2.1. Review the planning products (i.e., TOLD, Comm Card, etc.) to ensure they match the mission tasking.

11.2.2. Carry and operate SKL and portable media drives.

11.2.3. Coordinate with Intel to determine threats, EEIs, and any other required mission specific details prior to the flight.

11.3. In-flight Duties.

11.3.1. Communications. Monitor the primary ATC radio unless otherwise directed by the PIC. Record ATC clearances and monitor the read back during departure, enroute, and approach. This is not required when instructions require immediate execution by the pilot, or when such action interferes with the timely performance of other time-sensitive duties. Maintain SA on other air traffic in the area.

11.3.2. Mission Systems. Operate applicable mission systems IAW the U-28 AOH. Brief the PIC on any mission system that is not fully functioning.

11.3.3. Taxi. When duties permit, visually clear during ground operations.

11.3.4. Aircraft Monitoring. Use all available tools to monitor aircraft maneuvering and immediately inform pilots when off parameters during departure, arrival, and in the terminal area. Monitor and report deviations in aircraft configuration and checklist procedures. Tools include the TAC ADI, Foreflight® Maps and Attitude Indicator Display, system moving maps scaled appropriately for navigation and/or runway orientation, approach plates, and attitude/heading from the sensors. Visually clear for traffic and terrain when able. **(T-3).**

11.3.5. Enroute Navigation. Back up the pilots in obstacle and terrain clearance. Monitor aircraft heading, attitude via TAC ADI, and altitude. Immediately notify the PF when the aircraft exceeds briefed parameters. **(T-3).**

11.3.6. Emergency Procedures. Comply with Aircraft Monitoring in **paragraph 11.3.4** throughout the emergency procedure in addition to performing CSO duties. **(T-3).**

11.4. Post Flight Duties.

11.4.1. Perform hung flare check if applicable, refer to **Paragraph 8.10** for instructions. **(T-3).**

11.4.2. If maintenance is not available, after engine shut down, deplane and insert the tail stand and wheel chocks.

11.4.3. Participate in maintenance debrief and intelligence debrief (if applicable).

11.4.4. Ensure all classified equipment and papers are accounted for, secured or destroyed.

Chapter 12

OPERATIONAL REPORTS AND FORMS

12.1. General. This chapter contains a description of applicable reports and forms. For assistance in completing safety forms contact the wing/group, unit, or local flight safety officer.

12.2. AFSOC FORM 97, *Aircraft Incident Worksheet.* Refer to DAFI 91-204, *Safety Investigations and Reports*, and the AFSOC Sup. The appropriate Wing Safety Office (Wg/SE) will be notified of the following high interest items: insertion injuries, IFR incidents, dropped objects, or any other incident which, in the judgment of the Flight Safety Officer, needs to be reported. **(T-2).** Use the AFSOC FORM 97 when reporting these incidents to Wg/SE. DAFI 91-204 and the AFSOC Sup provide guidance that is common to investigating and reporting all US Air Force mishaps and instructions for using AFSOC FORM 97. Safety investigations and reports are conducted and written solely to prevent future mishaps.

12.3. AF Form 457, *USAF Hazard Report.* Refer to AFI 91-202, *The US Air Force Mishap Prevention Program*. The USAF hazard reporting system provides a means for Air Force personnel to alert supervisors and commanders to hazardous conditions requiring prompt corrective action. A hazard is any condition, act, or circumstance that jeopardizes or may jeopardize the health and well-being of personnel, or which may result in loss, damage, or destruction of any weapons system, equipment, facility, or material resource.

12.4. AF Form 651, Hazardous Air Traffic Report (HATR). Refer to AFI 91-202 Attachment 3.

12.4.1. The Air Force HATR program provides a means for personnel to report all near midair collisions and alleged hazardous air traffic conditions. Use information in HATR reports only for mishap prevention. **AFI 91-202** lists reportable incidents.

12.4.2. Procedures:

12.4.2.1. Make an airborne report of the hazardous condition to the nearest ATC agency (e.g., center, FSS, control tower, or aeronautical radio station), and give the following information as appropriate:

12.4.2.1.1. Identification or call sign.

12.4.2.1.2. Time and place (radial/DME, position relative to the airfield, etc.).

12.4.2.1.3. Altitude or flight level.

12.4.2.1.4. Description of the other aircraft or vehicle.

12.4.2.1.5. Include a verbal statement as soon as possible after occurrence that a written HATR report will be filed upon landing. **Note:** ATC agencies (e.g., FAA, etc.) must know if an official report is being filed.

12.4.2.2. File the HATR as soon as possible (within 24 hours) using any available means of communication. **(T-2).** Normally, it should be filed at the base operations office at the landing airport. If this is impractical and if communications permit, notify the safety office of the Air Force base where the condition occurred, the safety office at the home station, or as prescribed by the overseas MAJCOM. In any case, provide the safety office with all

available information needed to prepare AF Form 651. Turn in a completed copy of AF Form 651 to the wing/group safety office. **(T-2). Note*:*** HATR reports are not privileged information and may be released outside the USAF.

12.4.3. Individuals submitting a HATR are granted immunity from disciplinary action provided:

12.4.3.1. Their violation was not deliberate.

12.4.3.2. They committed no criminal offense.

12.4.3.3. No mishap occurred.

12.4.3.4. They properly reported the incident using the above procedures.

12.5. Reports of Violations/Unusual Events or Circumstances. Violations identified in AFMAN 11-202V3 AFSOC Sup and navigation errors (including overwater position errors exceeding 24 NM, border and ATC violations) will be reported. **(T-2).**

12.5.1. Include the following: factual circumstances, investigation and analysis, findings and conclusions, recommendations, and actions taken.

12.5.1.1. Attachments should include notification of incident, crew orders, statement of crew members (if applicable), and documenting evidence (logs, charts, etc.).

12.5.2. In addition to the information listed, the historical flight plan will be turned in to the C2 center or owning standardization and evaluation office.

12.5.3. Send the original investigation report within 45 days to the Inspector General (AFSOC/IG and AFSOC/A3). AFRC units receiving alleged violations will send the original investigation through channels to arrive at AFRC/A3 within 35 days. AFRC/A3 will send the investigation report to AFSOC/IG and AFSOC/A3 within 45 days.

12.5.4. The following Operational Report (OPREP)-3, *Event or Incident Report*, reporting procedures for all aircraft notified of navigational errors exceeding 24 NM will be reported under AFMAN 10-206:

12.5.4.1. On notification of a navigational position error, the PIC (or agency receiving notification) documents the circumstances surrounding the incident (report content below) and ensures submission of an OPREP-3 report through C2 channels.

12.5.4.2. Include the following:

12.5.4.2.1. Name and location of unit submitting report, mission identification number, reference to related OPREPs-3, type of event (e.g., state "navigation position error."), date, time (Zulu), and location (e.g., ATC sector).

12.5.4.2.2. Description of facts and circumstances. Include aircraft type and tail number, unit (wing/group or squadron assignment of crew), home base, route of flight, point of alleged deviation, and miles off course.

12.5.5. PICs must keep the appropriate agencies apprised of any unusual events or circumstances impacting their missions. Examples of reportable events include meaconing, jamming, intrusion, interception, fuel dumping, loss of multiple engines, hostile fire, injury to passengers or crew members, etc. This list is not exhaustive. Some events may require the C2

agency to forward OPREP reports to higher headquarters. The old adage, "when in doubt, report it," applies.

JAMES C. SLIFE, Lt. Gen, USAF
DCS, Operations

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

DoDM 5200.01V3, *DoD Information Security Program; Protection of Classified Information,* 11 April 2022

DoD 4515.13-R, *Air Transportation Eligibility,* 1 November 1994

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

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

DAFMAN 11-401, AFSOC Sup, *Aviation Management,* 7 January 2022

DAFMAN 13-217, *Drop Zone and Landing Zone Operations,* 22 April 2021

DAFI 31-101, *Integrated Defense,* 24 March 2020

DAFMAN 90-161, *Publishing Process and Procedures,* 15 April 2022

DAFI 36-2903, *Dress and Personal Appearance of United States Air Force and United States Space Force Personnel,* 7 February 2020

DAFI 91-204**,** *Safety Investigations and Reports,* 10 March 2021

AFMAN 10-206, *Operational Reporting,* 18 June 2018

AFI 10-801, *Defense Support of Civil Authorities,* 29 January 2020

AFMAN 11-2U-28AV1, *U-28A Aircrew Training,* 1 February 2023

AFMAN 11-2U-28V2, *U-28 Aircrew Evaluation Criteria,* 30 April 2019

AFI 13-207- *Preventing and Resisting Aircraft Piracy (Hijacking),* 5 February 2019

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

AFMAN 11-202V1, *Aircrew Training,* 27 September 2019

AFMAN 11-202V2, *Aircrew Standardization and Evaluation Program,* 30 August 2021

AFMAN 11-202V2_AFSOCSUP, *Aircrew Standardization/Evaluation Program,* 5 August 2022

AFMAN 11-202V3, *Flight Operations,* 10 January 2022

AFMAN 11-202V3_AFSOCSUP, *General Flight Rules,* 15 March 2021

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

AFI 11-301V1, AFSOC Sup, *Aircrew Flight Equipment (AFE) Program,* 7 July 2020

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

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

MIL STD 462D, *Test Method Standard for Measurement of Electromagnetic Interference Characteristics,* 20 August 1999

AFTTP 3-3.U-28, *Combat Aircraft Fundamentals U-28*, 30 September 2022

Adopted Forms

DD Form 1385, *Cargo Manifest*

DD Form 1801, *DoD International Flight Plan*

CF 6059B Form, *Customs Declaration*

DD Form 2131, *Passenger Manifest*

DD Form 2992, *Medical Recommendation for Flying or Special Duties*

AF Form 457, *USAF Hazard Report*

AF Form 651, *Hazard Air Traffic Report*

AF Form 711B, *USAF Aircraft Mishap Report*

AF 4327A, *Crew Flight Authorization*

AFSOC Form 97, *Aircraft Incident Worksheet*

DAF Form 847, *Recommendation for Change of Publication*

SF 44, *Purchase Order –Invoice Voucher*

AFTO Form 46, *Prepositioned Aircrew Flight Equipment*

Abbreviations and Acronyms

AC—Aircraft Commander

ACC—Air Combat Command

ADIZ—Air Defense Identification Zone

AETC—Air Education and Training Command

AF—Air Force

AFI—Air Force Instruction

AFM—Aircraft Flight Manual

AFMAN—Air Force Manual

AFPAM—Air Force Pamphlet

AFRC—Air Force Reserve Command

AFRIMS—Air Force Records Information Management System

AFSOC—Air Force Special Operations Command

AFSOF—Air Force Special Operations Forces

AFTO—Air Force Technical Order

AGL—Above Ground Level

AIMS—Airlift Implementation and Monitoring System

ALS—Approach Lighting System

AMC—Air Mobility Command

AMP—Airfield Marking Pattern

AOA—Angle of Attack

AOH—Aircrew Operating Handbook

AP—Area Planning

ARFF—Aircraft Rescue and Fire Fighting

ARMS—Aviation Resource Management Systems

ASDA—Accelerate-Stop Distance Available

ATC—Air Traffic Control

ATIS—Automatic Terminal Information System

C—Celsius

C2—Command and Control

CC—Commander

CDRUSSOCOM—Commander, United States Special Operations Command

COMAFSOF—Commander Air Force Special Operations Forces

CONUS—Continental United States

CSO—Combat Systems Officer

DA—Decision Altitude

DH—Decision Height

DME—Distance Measuring Equipment

DO—Operations Officer

DoD—Department of Defense

DoT—Department of Transportation

DV—Distinguished Visitor

ECS—Environmental Control System

EEI—Essential Elements of Information

EFB—Electronic Flight Book

EGPWS—Enhanced Ground Proximity Warning System

ELRF—Eyesafe Laser Range Finder

ERO—Engine Running Onload or Offload

ESA—Emergency Safe Altitude

ESTAT—Execution Status and Monitoring

ETA—Estimated Time of Arrival

ETE—Estimated Time Enroute

ETP—Equal Time Point

F—Fahrenheit

FAA—Federal Aviation Administration

FARP—Forward Area Refueling Point

FBO—Fixed Base Operator

FCG—Foreign Clearance Guide

FCIF—Flight Crew Information File

FDP—Flight Duty Period

FIH—Flight Information Handbook

FLIP—Flight Information Publication

FLTS—Flight Test Squadron

FOD—Foreign Object Damage

GDSS—Global Decision Support System

GPS—Global Positioning System

HAT—Height Above Touchdown

HATR—Hazardous Air Traffic Report

HF—High Frequency

HQ—Headquarters

IAW—In Accordance With

ICAO—International Civil Aviation Organization

IFE—In-Flight Emergency

IFF—Interrogation Friend or Foe

IFR—Instrument Flight Rules

IMC—Instrument Meteorological Conditions

IP—Instructor Pilot

IR—Infrared

KIAS—Knots of Indicated Airspeed

LDA—Landing Distance Available

LNAV—Lateral Navigation

LRD—Laser Range Designator

LTM—Laser Target Marker

LZ—Landing Zone

LZC—Landing Zone Controller

MAJCOM—Major Command

MC—Mission Commander

MDA—Minimum Descent Altitude

MEL—Minimum equipment list

MEP—Mission essential personnel

MESL—Minimum Essential Subsystem List

MIJI—Meaconing, Intrusion, Jamming, and Interference

MIL STD—Military Standard

MMEL—Master Minimum Equipment List

MOA—Memorandum of Agreement

MOR—Manual Over-ride

MPE—Mission Planning Environment

MSA—Minimum Safe Altitude

NAVAID—Navigational Aid

NM—Nautical Mile

NVG—Night Vision Goggles

OG—Operations Group

ONC—Operational Navigation Chart

OPCON—Operational Control

OPFOR—Opposing Forces

OPREP—Operational Report

PCL—Power Control Lever

PED—Portable Electronic Device

PF—Pilot Flying

PIC—Pilot In Command

PNF—Pilot Not Flying

RNAV—Area Navigation

SAR—Search and Rescue

SI—Spectrum Interference

SKL—Simple Key Loader

SOS—Special Operations Squadron

SOW—Special Operations Wing

STS—Special Tactics Squadron

TCAS—Traffic Collision Avoidance System

TERPS—Terminal Instrument Approach

TOLD—Take-Off And Landing Data

TORA—Take-off Run Available

UHF—Ultrahigh Frequency

USSOCOM—United States Special Operations Command

VFR—Visual Flight Rules

VHF—Very High Frequency

VMC—Visual Meteorological Conditions

Vref—Reference Speed

Office Symbols

AF/A3—Air Force Deputy Chief of Staff, Operations

AF/A3T—Training and Readiness Directorate

AFSOC/A3T—Operations Training

AFSOC/A3V—Special Activities

AFSOF—Air Force Special Operations Forces

AFSOC/A3VZ—Aircrew Stan/Eval

AFSOC/A4RX—Logistics Readiness

AFSOC/CC—Commander

AFSOC/IG—Inspector General

CDRUSSOCOM—Commander of U.S. Special Operations Command

COMAFSOF—Commander Air Force Special Operations Forces

OC/COD—AFSOC Operations Center/Combat Operations Division

OG/CC—Operations Group Commander

SOC/CC—Special Operations Commander

SQ/CC—Squadron Commander

WG/SE—Wing Safety

Terms

ABORT—To turn back from or cut short a mission before its successful completion for reasons other than enemy action. This may occur after an aircraft is airborne or on the ground before takeoff.

ACCELERATE—STOP DISTANCE. The runway required to accelerate the aircraft to rotate speed, set the PCL to idle, set the Condition Lever to Ground Idle, and stop the aircraft using average braking.

ALERT AIRCRAFT—An operationally ready aircraft specifically designated to be launched IAW timing factors established for the assigned missions with a ready crew available.

BORDER CLEARANCE—Those clearances and inspections required to comply with federal, state, Agricultural, Customs, Immigration, and Immunization requirements.

COMMANDER, AIR FORCE SPECIAL OPERATIONS FORCES (COMAFSOF)—The commander designated by Commander, United States Special Operations Command (CDRUSSOCOM) for CONUS deployments or by Theater SOC/CCs for overseas deployments, who is responsible for management of Air Force Special Operations Forces (AFSOF) within a theater, a geographic area, or a designated operation. The COMAFSOF is responsible to CDRUSSOCOM for management of CONUS-deployed AFSOF or to the respective SOC/CC for management of theater assigned AFSOF and is responsible to COMAFSOC for monitoring and management of AFSOF operating within the specific area of responsibility.

COMMAND AND CONTROL—The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission. Also called C2.

CREW COMPLEMENT—The number of crew personnel used for a specific mission.

DESIGNATED REPRESENTATIVE—Individuals authorized in writing by the appropriate command level as having decision-making authority.

EXERCISE—A military maneuver or simulated wartime operation involving planning, preparation, and execution. It is carried out for the purpose of training or evaluation. It may be combined, joint, or single-service, depending on participating organizations.

FARP—A ground site designated for quick refueling and/or rearming of the aircraft.

HAZARDOUS CARGO or MATERIALS—Explosive, toxic, caustic, nuclear, combustible or flammable, biologically infectious, or poisonous materials that may directly or indirectly endanger human life or property, particularly if misused, mishandled, or involved in accidents (AFMAN 24-37204(I)).

INTERFLY—The exchange and/or substitution of aircrew members and/or aircraft between MAJCOMs to accomplish flying missions.

INTRAFLY—The exchange and/or substitution of aircrew members from separate units under the same MAJCOM to accomplish flying missions.

MANIFEST—Movement record of traffic airlifted on aircraft operated by, for, or under the control of the Air Force.

MISSION FOLLOWING—Monitoring the location and status of aircraft and crews through the use of departure, arrival, and advisory messages.

OPERATIONALLY READY AIRCRAFT—An aircraft which is capable of flight with all required equipment operable to carry out the primary assigned mission.

Attachment 2

EQUAL TIME POINT

A2.1. Equal Time Point. The equal time point is an airborne decision point. It is the point along the route of flight (usually over water) from which it takes the same amount of time to return to the point of departure (or to the last suitable airfield) as it would to continue to the destination (or the first suitable airfield). In no wind conditions, the ETP is simply the halfway point between the two airfields. However, when flying into a headwind, the ETP moves closer to the destination aerodrome. Conversely, when flying into a tailwind, the ETP moves closer to the departure aerodrome. These calculations will also be impacted by the decision to fly at lower altitudes due to loss of aircraft pressurization without supplemental oxygen. The distance and time to the ETP from the departure aerodrome (or last suitable airfield) may be calculated using the following formulas:

$$\text{Distance to ETP} = \frac{(\text{Total Distance}) \times (\text{Ground Speed Home})}{(\text{Ground Speed Out}) + (\text{Ground Speed Home})}$$

$$\text{Time to ETP} = \frac{\text{Distance to ETP}}{\text{Ground Speed Out}}$$

Figure A2.1. Example.

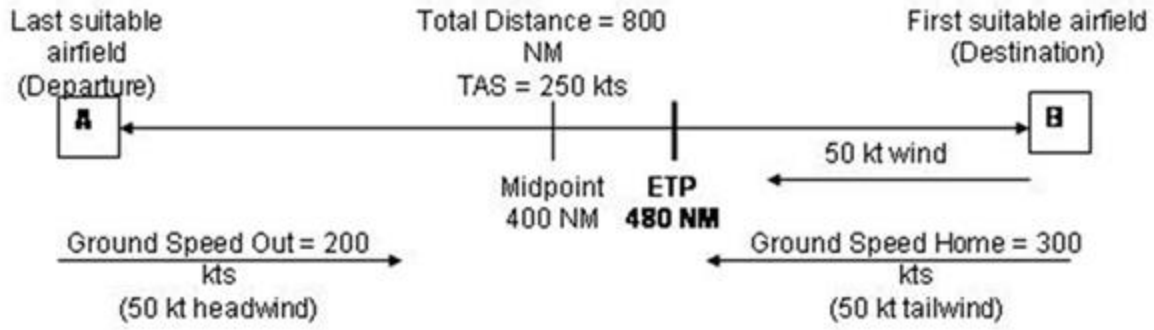
Problem:

Distance from A to B: 800 NM
Wind: 50 kts headwind
TAS: 250 kts
GS Out: 200 kts (250 kts - 50 kt headwind)
GS Home: 300 kts (250 kts + 50 kt tailwind)

Solution:

$$\text{Distance to ETP} = \frac{800 \times 300}{200 + 300} = \frac{240{,}000}{500} = 480 \text{ NM}$$

$$\text{Time to ETP} = \frac{480 \text{ NM}}{200 \text{ kts}} = 2.4 \text{ hrs}$$



Attachment 3

U-28 OCEAN CROSSING ORM WORKSHEETS

A3.1. Figure A3.1 is designed to be run before scheduling a duckbutt, use historical averages for the weather conditions (use **Figure A3.2** initially but obtain updated information through your Operational Weather Squadron). Figures **A3.3-A3.6** are designed to be run during preflight planning, consult your local weather flight or servicing Operational Weather Squadron (see AFVA 15-137, *Operational Weather Squadron Areas of Responsibility*) for climatological data for enroute flight level winds, temperatures, sea states and water temperatures.

A3.2. Duckbutt. A duckbutt is recommended for all U-28 ocean crossings and required if any risk factor falls in the High category.

Figure A3.1. U-28 Ocean Crossing: Planner's Risk Analysis.

U-28 Ocean Crossing: Planner's Risk Analysis				
Risk Factor	**Low**	**Moderate**	**High**	**Severe**
Fuel				
Estimated Fuel Reserve at Destination	2+00 or greater	1+00 to 1+59	0+30 to 0+59	Less than 0+30
Available Diverts (beyond ETP)	5+	3 to 4	1 to 2	Remote or island destination
Enroute Weather				
Sea State	0 to 1	2 to 3	4 to 6 [1]	7 to 9+ [2]
Water Temp	70°F or greater	60°F to 70°F	40°F to 60°F [3]	40°F or less [4]
Air Temp	70°F or greater	60°F to 70°F	40°F to 60°F [3]	40°F or less [4]
Destination Weather				
Cross Winds	14 kts or less	15 to 24 kts	25-29 kts	30 kts or greater
Ceiling	> 3000 ft	< 3000 ft	< 1500 ft	< 500 ft
Visibility	10+ miles	5-9 miles	2-5 miles	<2 miles
Estimated Survival Time				
Dry Suit + Raft	Greater than 2 days	1 to 2 days	12 to 24 hours	Less than 12 hours
Dry Suit + LPU	Greater than 1 day	12 to 24 hours	1 to 12 hours	less than 1 hour
Rescue Assets				
% of Route in range of shore-based rescue	100 %	75-99%	50-74%	<50%

Notes:
1. Successful ditching in doubt
2. Successful ditching unlikely
3. PJs should not enter the water, team leader go/no-go decision (3-3. Guardian Angel limits)
4. PJs will not enter the water (3-3. Guardian Angel limits)

Figure A3.2. U-28 Ocean Crossing: Monthly Historical Weather Averages.

ROUTE	ATLANTIC				PACIFIC			
MONTH	WATER TEMP	WAVE HEIGHT	WINDS ALOFT	CLOUD COVER	WATER TEMP	WAVE HEIGHT	WINDS ALOFT	CLOUD COVER
January	38-52 F	7-14’	235/50	70%	40-34 F	4-8’	260/40	70-80%
February	34-52 F	7-16’	235/55	70%	40-34 F	4-8’	260/30	70%
March	32-52 F	7-12’	240/50	65-70%	38-34 F	3-8’	265/40	70%
April	34-54 F	5-10’	245/50	60-70%	38-36 F	3-6’	270/40	60-70%
May	36-56 F	4-8’	245/40	60%	40-38 F	2-5’	275/35	70%
June	38-58 F	4-7’	260/40	60%	42-40 F	2-4’	275/30	70%
July	42-60 F	3-6’	270/35	60-70%	52-48 F	2-3’	280/30	60-70%
August	44-60 F	2-6’	270/40	60-70%	58-52 F	2-3’	270/35	60-70%
September	46-62 F	3-9’	270/50	65%	60-52 F	2-4’	270/40	60%
October	42-58 F	7-12’	265/45	65%	56-48 F	3-6’	270/45	60%
November	40-52 F	7-13’	265/50	70%	48-42 F	3-8’	265/50	60-70%
December	38-52 F	7-14’	245/50	70%	46-38 F	3-10’	270/45	70%

Notes:
1. Cloud cover % based on average # of days in month of mostly overcast conditions. Days with clearconditions may still exist
2. All statistics based on monthly averages
3. Go/No-Go:
NO GO conditions for PJ’s during these months
Possible GO
GO conditions for PJ’s during these months

Figure A3.3. U-28 Ocean Crossing: Day-of-Mission Risk Analysis.

U-28 Ocean Crossing: Day-of-Mission Risk Analysis				
Risk Factor	**Low**	**Moderate**	**High**	**Severe**

Fuel				
Estimated Fuel Reserve at Destination	2+00 or greater	1+00 to 1+59	0+30 to 0+59	Less than 0+30
Available Diverts (beyond ETP)	5+	3 to 4	1 to 2	Remote or island destination
Enroute Weather				
Sea State	0 to 1	2 to 3	4 to 6[1]	7 to 9+[2]
Water Temp	70°F or greater	60°F to 70°F	40°F to 60°F[3]	40°F or less[4]
Air Temp	70°F or greater	60°F to 70°F	40°F to 60°F[3]	40°F or less[4]
Surface Winds	6 kts or less	7 to 16 kts	17 to 21 kts[5]	22-25 kts or greater[5]
Ceiling	> 5,000 feet	< 5,000 feet	Less than mins for RAMZ/ MFF jump + 200feet[6]	Less than mins for PJ static line jump + 200 feet[6]
Destination Weather				
Cross Winds	14 kts or less	15 to 24 kts	25-29 kts	30 kts or greater
Ceiling	> 3000 ft	< 3000 ft	< 1500 ft	< 500 ft
Visibility	Unrestricted	5-10 miles	2-5 miles	<2 miles
Estimated Survival Time				
Dry Suit + Raft	Greater than 2 days	1 to 2 days	12 to 24 hours	Less than 12 hours
Dry Suit + LPU	Greater than 1 day	12 to 24 hours	1 to 12 hours	less than 1 hour
Rescue Assets				
Formation Support	HC-130 w/ PJs	Other C-30 w/ PJs	Any Formation, no PJs	Single Ship
Ships	USN/USCG Ships within 50 nm	USN/USCG Ships within 100 nm	Any ships within 100 nm	No Ships within 100 nm
% of Route in range of shore-based rescue	100%	75-99%	50-74%	<50%
Estimated Time to Rescue	< 12 hours	12-24 hours	1-2 days	Time to pickup exceeds survival

				time

Notes:
1. Successful ditching in doubt
2. Successful ditching unlikely
3. PJs should not enter the water, team leader go/no-go decision (3-3. Guardian Angel limits)
4. PJs will not enter the water (3-3. Guardian Angel limits)
5. Consult RAMZ limits, FXC may not release
6. See AFI 16-1202 and consult PJ team for limits

Figure A3.4. U-28 Ocean Crossing: Sea State Chart.

Abbreviated APPENDIX D Sea State Chart from USSOCOM M350-4/Vol 2

DESCRIPTION	WIND FORCE (BEAUFORT)	WIND DESCRIPTION	WIND RANGE (KNOTS)	AVG HEIGHT (FEET)
Mirror	0	Calm	< 1	0
Ripples	1	Light Air	1 to 3	0.5
Wavelets	2	Light Breeze	4 to 6	0.18
Lg Wavelets	3	Gentle Breeze	7 to 10	.6-.88
Sm Waves	4	Mod Breeze	11 to 16	1.4-2.9
Mod Waves	5	Fresh Breeze	17 to 21	3.8-5.0
Large Waves	6	Strong Breeze	22 to 27	6.4-9.6
Sea Heaps	7	Mod Gale	28 to 33	11-16.5
Mod High	8	Fresh Gale	34 to 40	19-28
High Waves	9	Strong Gale	41 to 47	31-40
Very High Waves	10	Whole Gale	48 to 55	44-59
Except. High W	11	Storm	56 to 63	64-73
HURRICANE	12	Hurricane	64 to 71	>80

Figure A3.5. U-28 Ocean Crossing: Survival Matrix.

600 Series Immersion Dry Coveralls User Maintenance Manual, Issue 13, Aug 12, Table 2, Survival Matrix					
Level of Clothing (underneath Suit)	**Clo Value**	**Predicted Survival Time (hours)**			
		Water Temp < 40F	**Water Temp 40-50F**	**Water Temp 50-60F**	**Water Temp > 60F**
Cotton T- shirt, Briefs, Wool Socks	0.32	1.5	2.5	4	6
Thermal long johns, Long sleevedT- shirt, Wool socks	0.47	2.5	4.5	7	15

Figure A3.6. U-28 Predicted Survival Time Against Sea Temperature.

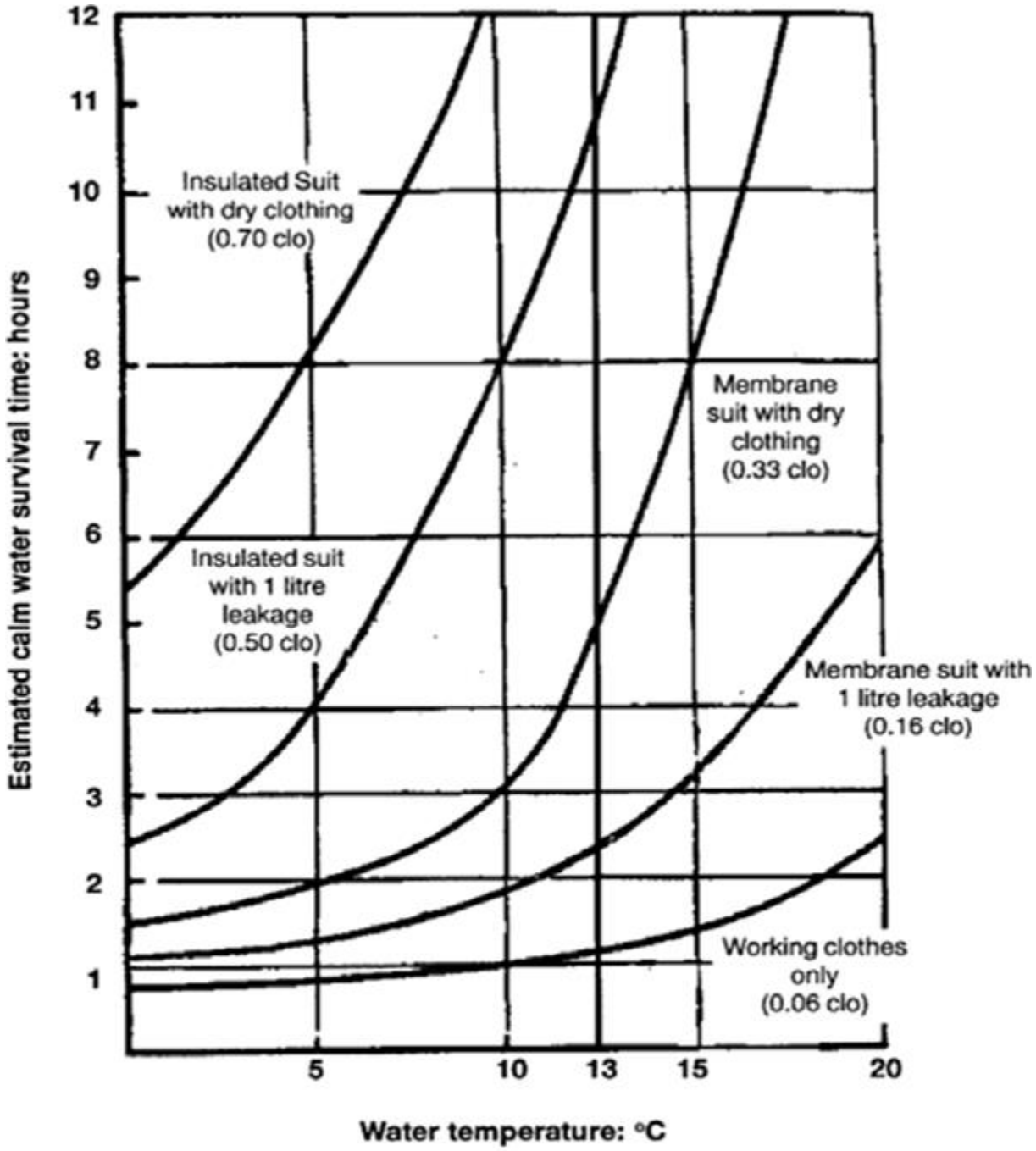


Figure 2
Predicted Survival Time Against Sea Temperature for Different Levels of Immersed Clothing Insulation - As Derived from Wissler Model, Modified by Hayes, 1987

Attachment 4

LIFE SUPPORT EQUIPMENT FOR U-28 OCEAN CROSSINGS

A4.1. AC-9, 9-Man Life Raft (In raft survival kit)

A4.1.1. Sea dye markers

A4.1.2. Flares

A4.1.3. Reverse Osmosis water filter

A4.1.4. Raft Plugs

A4.1.5. Sea Anchor

A4.1.6. Rations

A4.2. Carry-on supplemental O2 bottle (sufficient total O2 to fly from ETP to planned destination or divert)

A4.3. OTS 600 Series dry suit with neoprene gloves and hood

A4.4. LPU-10/P "water wings" with strobe attached

A4.5. Massif or natural-fiber under garments. Wear insulating layers under the dry suit appropriate to what you would wear for a day outside in coldest anticipated water/air temp.

A4.6. SATCOM capable handheld radio – waterproofed: CSEL, PRC-152 or PRC-112)

A4.7. Satellite phone – enabled for worldwide service

A4.8. Personal Locator Beacon in raft survival kit or attached to dry suit

A4.9. ML-4 Kit (with minimum survival components)

A4.9.1. OTS 600 Series dry suit with neoprene gloves and hood (OPTIONAL)

A4.9.2. LPU-10/P "water wings" with strobe attached

A4.10. SATCOM capable handheld radio – waterproofed: (CSEL, PRC-152, PRC-112 or Personal Locator Beacon). **Note:** All non-water flights only require a Minimum Survival Kit for aircraft configuration to conduct combat/training mission.