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SECRETARY OF THE AIR FORCE**

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Flying Operations

E-9--OPERATIONS PROCEDURES



COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This volume implements AFD 11-2, *Aircraft Rules and Procedures*; AFD 11-4, *Aviation Service*; and AFI 11-202V3, *General Flight Rules*. It applies to all E-9 units. This publication does not apply to Air National Guard (ANG) or Air Force Reserve Command (AFRC) units and members. MAJCOMs/DRUs/FOAs are to forward proposed MAJCOM/DRU/FOA-level supplements to this volume to AFFSA/XOF, through HQ ACC/XOFS, for approval prior to publication IAW AFD 11-2. Copies of MAJCOM/DRU/FOA-level supplements, after approved and published, will be provided by the issuing MAJCOM to HQ AFFSA/XOF, HQ ACC/XOFS, and the user MAJCOM/DRU/FOA and NGB offices of primary responsibility (OPR). Field units below MAJCOM/DRU/FOA level will forward copies of their supplements to this publication to their parent MAJCOM/DRU/FOA office of primary responsibility for post publication review. **NOTE:** The terms Direct Reporting Unit (DRU) and Field Operating Agency (FOA) as used in this paragraph refer only to those DRUs/FOAs that report directly to HQ USAF. Keep supplements current by complying with AFI 33-360V1, *Publications Management Program*. See paragraph 1.4. of this volume for guidance on submitting comments and suggesting improvements to this publication. Maintain and dispose of records created by processes prescribed in this instruction IAW AFMAN 37-139, *Records Disposition Schedule*.

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

This interim change (IC) 00-1 expands on crosswind limitations in paragraph 3.11., deletes waiver authority notes in Table 3.1., deletes the requirement to have circling minimums to accomplish touch and go landings in paragraph 3.15., changes review and approval procedures for cross country flights in paragraph 3.20., deletes references to stop and go landings, changes touch and go landing minimum runway length in paragraph 7.9., and corrects several typographical/administrative errors. See the last attachment of the publication, IC 00-1, for the complete IC. A bar (|) indicates revision from the previous edition.

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Chapter 1

INTRODUCTION

1.1. Aircrew's Responsibility. This instruction, in conjunction with the flight manual and AFI 11-202V3, *General Flight Rules*, as supplemented and other governing directives, prescribes procedures for E-9 aircraft under most circumstances but is not to be used as a substitute for sound judgment or common sense. Operations or procedures not specifically addressed may be accomplished if they enhance safe, effective mission accomplishment.

1.2. Deviations. Deviations from these procedures require specific approval from the 53 WEG/CC unless an urgent requirement or an aircraft emergency dictates otherwise; in which case, the aircrew will take the appropriate action to safely recover the aircraft.

1.3. Waivers. Waiver requests will be forwarded through appropriate channels to the 53 WEG/CC for approval. Waivers, if approved, will be issued for a maximum of 1 year from the effective date.

1.4. Instruction Changes:

1.4.1. Submit recommendations for changes to this volume using AF Form 847, **Recommendation for Change of Publication**, through the 53 WEG Stan/Eval. Approved AF Forms 847 will be forwarded to HQ ACC/XOFS for final approval and incorporation. HQ USAF/XO is the approval authority for changes and revisions to this instruction. HQ ACC/XOFS will forward proposed changes and revisions to HQ AFFSA/XOF for staffing.

1.5. Checklists. The abbreviated checklists may be locally reproduced until formal Air Force Tech Orders and Checklists are produced from Tinker AFB, OK.

Chapter 2

MISSION PLANNING

2.1. Responsibilities. The Aircraft Commander (AC) is the final authority for proper mission planning and the safe conduct of the flight.

2.2. General Procedures. Aircrews will perform mission planning in sufficient detail to ensure safe and efficient mission accomplishment.

2.2.1. DD Form 365-4, Weight and Balance Clearance Form F or Equivalent. Pre-computed DD Forms 365-4 (or equivalent) are permitted. They must be available for ready reference and kept current in accordance with the contractor's maintenance plan. The aircraft commander is responsible for ensuring the center of gravity is within specified limits for all flights.

2.2.2. Weather Briefing. The aircraft commander obtains the best information available concerning weather, trends, and forecast for takeoff, the proposed route, destination, and alternate airfields.

2.2.3. Takeoff and Landing Data (TOLD) Computations. A TOLD card will be computed any time preprinted cards do not cover the conditions existing at the takeoff location.

2.3. Map/Chart Preparation:

2.3.1. Local Area Maps. A local area map is not required if pilot aids include divert information and provide sufficient detail of the local area to remain within assigned working areas.

2.3.2. Charts. Flight Information Publications (FLIP) enroute charts may be used instead of maps on navigational flights within areas that are adequately covered by these charts.

2.4. Briefing/Debriefing:

2.4.1. The aircraft commander is responsible for presenting a logical briefing that will promote safe, effective mission accomplishment and crew coordination. All crewmembers will attend these briefings unless excused by the aircraft commander. Regardless, all crewmembers will be briefed prior to engine start. Briefing guides will be used to provide the aircraft commander with a reference list of items that may apply to particular missions. Items listed may be briefed in any sequence. The aircraft commander should tailor the briefing to the experience level of the aircrew participating in the mission as well as the difficulty of the mission.

2.4.2. Briefings should begin at least 1 hour before scheduled takeoff time.

2.4.3. An alternate mission will be briefed for each flight. Other than basic instrument and transition sorties, specifically brief the "Top 3" for approval of alternate mission profile.

2.4.4. Departure/Approach Briefing. The pilot who will perform the takeoff will accomplish the departure briefing. Attachment 1 outlines the minimum items to be covered. This briefing will be completed prior to taxiing onto the runway for takeoff. The approach briefing will be accomplished in conjunction with the descent or traffic pattern checklist. Attachment 1 outlines the minimum items to be covered prior to each approach. On touch-and-go/stop-and-go landings; only the asterisked items need be covered. Briefings are further discussed in [Chapter 3](#).

2.5. Unit Developed Checklists/Local Pilot Aids. 53 WEG/WSEP Pilot Aids will be used for all local flights.

Chapter 3

NORMAL OPERATING PROCEDURES

3.1. General. The procedures in this chapter cover operation of the aircraft from takeoff through landing. The aircraft commander has command over all personnel onboard and is responsible for the safe conduct of the mission.

3.2. Crew Complement:

3.2.1. **Minimum Crew.** The minimum crew is two pilots.

3.2.2. Basic crewmembers will occupy their respective seats during:

3.2.2.1. Takeoff, approach, and landing.

3.2.2.2. Climb and descent.

3.2.2.3. Emergencies (simulated and actual).

3.2.2.4. Turbulent flight conditions.

3.2.3. The system operator, telemetry operator, or any passenger may occupy the jump seat as long as CG stays within limits.

3.3. Flight Duty Period. The flight duty period is 12 hours without an operative autopilot. No planned touch-and-go or practice/simulated emergency work will be accomplished after the flight duty period extends past 12 hours.

3.4. Flight Kit Requirements. The following items will be carried as applicable:

3.4.1. AFI 11-202V3/ACC Sup 1.

3.4.2. Aircraft Flight Manual.

3.4.3. Data Operating Handbook.

3.4.4. Minimum Equipment List (MEL).

3.4.5. FLIP terminal instrument approach procedures for the operating area of the aircraft.

3.4.6. FLIP enroute charts.

3.4.7. FLIP enroute supplement.

3.4.8. Pilots Flight Plan and Flight Log (AF Form 70) or approved substitute.

3.4.9. FLIP Standard Instrument Departures (SIDs) and FLIP Standard Terminal Arrival Routes (STARs).

3.4.10. 53 WEG/WSEP Pilot Aid.

3.4.11. Supplemental weight and balance handbook to include a DD Form 365-4 (or equivalent) with standard setups (i.e., 2 pilots, 2 crew, and a full fuel load).

3.5. Minimum Equipment. Minimum equipment will be as established in the aircraft flight manual, the MEL, and maintenance guidance. The aircraft commander is responsible for ensuring equipment required for safe flight is operable.

3.6. Aircraft Loading/Cargo Handling:

3.6.1. Ensure a weight and balance computation is accomplished if cargo/passengers change the standard configuration weight and balance on aircraft.

3.6.2. Emergency Exits and Safety Aisles:

3.6.2.1. The emergency cabin exits will be unobstructed for flight.

3.6.2.2. Load cargo to provide an unobstructed safety aisle from the crew compartment to the rear of the aircraft.

3.6.2.3. Cargo, including baggage, will be safely secured.

3.6.3. **Arms and Ammunition.** No ammunition will be carried in magazines, clips or inserted in weapons aboard the aircraft except when approved by the aircraft commander.

3.6.4. **Transportation of Passengers.** Passengers are limited to personnel authorized IAW AFI 11-401/ACC Sup 1, *Flight Management*, and approved by the 53 WEG/CC. Orientation flights may be accomplished IAW AFI 11-401/ACC Sup 1 and ACCI 11-450, *Orientation Flight Program*. **NOTE:** ACCI 11-450 is scheduled to be incorporated into AFI 11-401/ACC Sup 1 during the forthcoming revision of AFI 11-401.

3.7. Passenger Manifest. The aircraft commander is responsible for ensuring a copy of the manifest is filed with a responsible agency at the departure point, and that sufficient copies of the manifest are in their possession before departure.

3.8. Preflight. The aircraft commander ensures the following are accomplished before departure.

3.8.1. **Maintenance and Inspection Records Review.** The AFTO Form 781, **Aerospace Vehicle Flight Data Document**, will be available at the aircraft when the crew reports to visually inspect the aircraft. No aircraft system will be activated without the Aircraft Commander first reviewing the records and briefing the crew on all applicable discrepancies.

3.9. Taxi. All checklists will be accomplished IAW applicable flight manuals/local procedures.

3.9.1. All aircraft doors will be closed during taxi operations, except the flight deck emergency escape hatch, which may be open for ventilation.

3.9.2. During ground operations in congested areas, all aircrew members will devote their full attention to clearing the aircraft.

3.9.3. The reverse taxi capability of the E-9 will not be utilized, except in an emergency.

3.10. Runway Criteria:

3.10.1. **General.** The aircraft commander will determine that all airfield facilities are of suitable construction, width, length between barriers, and weight bearing capacity.

3.10.2. Taxi, takeoff, touch-and-gos, and landings over a raised cable are not authorized due to restricted clearance of the sea surveillance radar dome.

3.10.3. **Minimum Takeoff Runway.** The accelerate stop distance corrected by Runway Condition Reading (RCR) must be less than 80% of usable runway available

3.10.4. **Minimum Landing Runway.** The computed landing distance must be less than 80% of the useable landing distance (without propeller reverse) corrected for RCR.

3.10.5. Operations from other than hard surfaced runways are not authorized.

3.11. Crosswind Limitations for All Takeoff and Landings. The following table will be used to determine maximum crosswind component allowed for takeoffs or full stop landings. Maximum crosswind for touch and go landings is 10 kts on a wet runway and 15 kts on a dry runway. (**NOTE:** For wet runway use RCR 12, for ice or snow on runway use RCR 05, for dry runway use RCR 23-26.)

Table 3.1. RCR Limits.

RCR	MAXIMUM CROSSWIND IN KNOTS
26-23	20
15-12	15
11-09	10
08-05	05
04-01	Takeoff/landing not authorized

3.12. Maximum Gross Weights. Operating weights will be in accordance with the flight manual weight, altitude, and temperature limits. These limits will not be exceeded.

3.13. Takeoff, Departure, Climb, and Cruise:

3.13.1. **Takeoff, Departure, and Climb Briefing.** As a minimum, the items listed in [Attachment 4](#) will be covered.

3.13.2. **Takeoff.** Takeoff weather minimums will be in accordance with AFI 11-202V3/ACC Sup 1.

3.13.2.1. **General.** To obtain the best takeoff performance, takeoff procedures should be followed exactly. Airplane performance, as predicted by the performance section, can only be achieved by following the procedures contained in this section. These procedures result in the safest possible operation of the airplane.

3.13.2.2. **Performance Data.** All factors which affect the performance of the airplane will be considered when computing takeoff data. Any one factor or combination of factors can jeopardize the safe accomplishment of the takeoff. Pilots should have complete understanding of the effects of gross weight, temperature, pressure altitude, runway available, runway gradient, runway condition, and wind on the airplane performance.

3.13.2.3. **Flap Setting.** Takeoff flap setting will be 5 degrees unless runway or climbout requirements dictate otherwise. Takeoff with 0 degrees flaps is not authorized.

3.13.2.4. **Take-off Procedures.** Regardless of who is making the takeoff, the AC will taxi and align the aircraft on the runway for takeoff. Transfer of directional control will occur once the aircraft is in position for takeoff. The pilot making the takeoff will smoothly advance the power levers to approximately takeoff torque then ask the pilot not flying to set take-off power. The

non-flying pilot will position his hand at the base of the power levers, set takeoff power, and guard the power levers during the takeoff.

3.13.2.5. If an aborted take-off is necessary, the pilot making the take-off will promptly retard the power levers to disc while braking as necessary to stop the aircraft. Once the control column is locked the AC will take control of the aircraft.

3.13.2.6. Mandatory callouts to be made by the non-flying pilot during take-off are as follows:

3.13.2.6.1. "V1" at decision speed.

3.13.2.6.2. "Rotate" at rotate speed. If V1 is above rotate speed, only rotate needs to be called.

3.13.2.6.3. "Positive Rate" when a positive rate of climb is indicated.

3.13.2.6.4. "400 ft" at 400ft Above Ground Level (AGL) or "Cleanup Height" if obstacle height is greater.

3.13.3. **Safety Belts, Shoulder Harness and Life Vests.** The aircraft commander will ensure crew members and passengers have safety belts securely fastened during takeoffs, approaches, landings, simulated emergencies and when turbulence is encountered or anticipated.

3.13.3.1. When occupying their crew position, the pilot and copilot will have safety belts and shoulder harnesses fastened at all times.

3.13.3.2. Life vests will be located in the immediate vicinity of the crew on over water flights so as to be accessible and worn when directed by the aircraft commander.

3.13.4. **Engine Out Takeoff.** Engine out takeoffs are not authorized.

3.13.5. **Oxygen Requirements.** Oxygen will be used as prescribed in AFI 11-202V3/ACC Sup 1 or the flight manual, whichever is more restrictive.

3.13.6. Only aircrew-essential communications are permitted from commencement of the takeoff roll until passing an altitude of 400' AGL. This applies during touch-and-go or stop-and-go landings also.

3.13.7. **Navigational Aids.** Applicable navigational aids will be tuned and identified prior to departure to ensure accurate aircraft positioning.

3.13.8. **Operations Under Adverse Conditions.** The following guidance will be strictly adhered to:

3.13.8.1. **Thunderstorms.** There is no mission which requires intentional penetration of a thunderstorm. Aircrews will follow guidance in AFI 11-202V3/ACC Sup 1.

3.13.8.2. Intentional flight into areas of known or forecast freezing rain or severe icing is prohibited. Cruising flight in moderate icing is permissible provided all de-ice equipment is operating and mission requirements will not allow for alternate profiles. The E-9 will not takeoff with suspected snow/ice on aircraft surfaces.

3.13.8.3. Missions will not be planned into areas of forecast severe turbulence.

3.13.9. **Altitude Monitoring.** When climbing or descending, the pilot not flying the aircraft will call 1,000 feet above/below and level off altitude. The pilot not flying the aircraft will inform the pilot at the controls anytime the indicated altitude varies more than 100 feet from the desired altitude, or if the aircraft appears to be dangerously close to terrain or obstructions.

3.14. Loading and Offloading of Personnel. The #1 engine will be shut down and the propeller stopped before loading or unloading. An aircrew member or crew chief will be positioned at the air stair door to assist passengers and keep them away from the aircraft propeller.

3.15. Touch-and-Go Landings. Touch-and-go landings are authorized on runways with 6,000 ft or more between barriers. Touch-and-gos are not authorized when there are passengers who are not on the AFTO Form 781.

3.15.1. The following procedures will be used.

3.15.1.1. After the plane has touched down, the pilot not flying will reset the flaps to 5°, arm the autofeather switch, and ensure the pitch trim is within limits (it usually takes some forward trim to prevent the trim being near the aft limit and allow a normal rotation force).

3.15.1.2. At Vrotate speed, the pilot not flying will state "ROTATE." Extreme caution must be used once the power is pushed up and a decision to abort has to be made with minimum runway remaining.

3.16. Landings. All landings will be made with 15 degrees of flaps unless an emergency dictates otherwise. Ensure sufficient runway is available beyond any barrier to permit a full stop landing without use of Reverse.

3.17. Transfer of Aircraft Control. When transferring control, the aircraft altitude, heading, airspeed and navigation aid will be confirmed.

3.18. Fuel Requirements. Comply with AFI 11-202V3/ACC Sup 1 and local guidance, if applicable.

3.18.1. **Minimum Fuel.** Fuel at touch down of 400 lbs.

3.18.2. **Emergency Fuel.** Fuel at touch down of 260 lbs.

3.19. Closed Traffic Patterns. Initiate the pattern at the departure end of the runway unless directed/cleared otherwise by local procedures or the controlling agency.

3.20. Cross-Country (X/C) Procedures:

3.20.1. **Review/Approval.** All off-station training and cross country sorties that will remain overnight will be approved IAW ACCI 11-261, *Cross Country Operations*.

3.20.2. **Enroute Reporting.** Any enroute changes in itinerary must be prior coordinated and approved through the 82 ATRS DO.

3.20.3. **Refueling and Servicing.** Aircrews should have refueling instructions, oil and oxygen servicing instructions, and extra oil onboard the aircraft. Crews will check the oil level within 30 minutes of engine shutdown.

3.21. Night Flying Operations. Night flying operations are authorized. Pilots must be current and qualified IAW ACCR 51-60V7, *E-9A (Airborne Platform)* (to be published as AFI 11-2E-9V1).

Chapter 4

INSTRUMENT PROCEDURES

4.1. Approach Category. The E-9A is approach Category B.

4.2. Weather Requirements. See AFI 11-202V3/ACC Sup 1.

4.2.1. **Takeoff, Climb, and Cruise.** Follow procedures described in [Chapter 3](#).

4.3. Descent. Obtain approach and landing weather, compute landing data, and review the planned initial descent and approach. This initial review will at minimum include navigation aid frequencies, minimum and emergency safe altitudes, descents rates, minimums for the approach to be flown, missed approach procedures, landing ground roll and flare distance, and aerodrome sketch. The pilot flying the approach will brief the crew each time on the descent rate, Minimum Descent Altitude (MDA)/Decision Height (DH)/Vision Descent Point (VDP), and missed approach/climbout procedures. Lost communications procedures will be coordinated if required. During the descent and approaches, other crewmembers will back up the pilot flying the approach and report any deviation from prescribed procedures.

4.3.1. The pilot flying the approach will set the radio altimeter MDA index to the Height Above Touchdown (HAT) or Height Above Airport (HAA) for the approach being flown. The other pilot will set his index to 100 ft above HAT or HAA.

4.4. Instrument Approaches:

4.4.1. **Approach Selection.** When shooting approaches at night, the first approach flown should be a precision approach if available.

4.4.2. Approach Procedures:

4.4.2.1. Pilot not flying will announce At a hundred feet above MDA/DH-- "100 feet above."

4.4.2.2. Pilot flying will announce "MDA/DH", "VDP", "Missed approach point" and state intentions, i.e. continuing, touch and go, full stop, going around, etc., at VDP, DH, and Missed Approach Point (MAP). The pilot not flying will query the pilot flying at each point if the proper callout is not made or misunderstood.

Chapter 5

MISSION PROCEDURES

5.1. General. Procedures in this chapter are to be used on E-9 missions in support of WSEPs and Eglin test missions. The procedures are designed to provide aircrews with standard methods of operation under normal conditions. The aircraft commander is the final authority to operate other than standard if the situation dictates.

5.2. Mission Planning:

5.2.1. A pilot and telemetry operator should attend the WSEP pre-briefs unless missions dictate not attending. If absent from the WSEP pre-brief, the Hammer will be notified accordingly and information will be conveyed over the phone. For Eglin missions, the telemetry operator should coordinate mission requirements over the phone.

5.2.2. The crew briefing should occur at one hour prior to planned takeoff. All crew members should come to the crew briefing knowing what is needed to accomplish their portion of the mission. The main focus of the crew briefing should be a discussion on how the crew will act as a team to best accomplish the particular mission safely.

5.3. Departure:

5.3.1. For normal missions in the Gulf Range the E-9 will fly a stereo flight plan. The crew will plan to arrive at assigned airspace at the beginning of their range time

5.4. Warning Areas. There are three Warning Areas that the E-9 often operates in off the panhandle of Florida: W151, W155, and W470. These Warning Areas are defined in FLIP. Controlling agencies are required to give authorized aircraft operating in Warning Areas a border call when they get within 5 miles of a border. They are required to give aircraft a turn when they get within 2.5 miles in order to prevent a spill out or dangerous situation. If the crew requires the airspace within 5 miles of the border to their specific authorized airspace, they will coordinate with the controlling agency.

5.4.1. W-151:

5.4.1.1. Eglin owns W-151 (the controlling agency is Eglin Mission on 290.9). W-151 is divided up into smaller sections: A, B, C, D. Each of these sections are further divided into alpha numeric sections: A1, A2, A3, A4, A5, A6; B1, B2, B3, B4, B5; C1, C2, C3, C4; and D1, D2, D3, D4. The northern boundary of W-151 is defined as 3 miles off the coast, however, there are shoreline areas and transition areas within W-151 which prevent aircraft from using the northern areas of W-151 fully.

5.4.1.2. If Wetstone/Chamber is not controlling the crew and the crew can not maintain Visual Flight Rules (VFR) then they will attempt to be controlled by Eglin Mission (Ultra High Frequency (UHF) = 290.9). Maintain VFR until contact is made.

5.5. Range Patrol:

5.5.1. Initial range patrol will be accomplished at an altitude that the radar operator determines to be the best for that day, but all attempts will be made to keep UHF radio contact with the controlling

agency. Normally altitudes from 5,000 ft to 8,000 ft work for initial range patrol. If radio contact can not be maintained the crew will inform the controlling agency prior to descending. They will give an Estimated Time of Arrival (ETA) of when they will ascend back to an altitude where radio contact can be made.

5.5.2. After the initial range patrol, the radar operator will confirm boats of interest with the Range Safety Officer. He will inform the pilots of where those boats are. The radar operator will update these contacts when the radar allows. If the radar is not able to keep updates on the boats of interest, the radar operator will convey to the pilots these boats and their position. The pilots will make every attempt to allow the radar to update all boats of interest. If the crew thinks that they will not be able to update a boat of concern for longer than 30 minutes the radar operator, "Vanna", will inform the Range Safety Officer. This call will include the contact number and the last time of known update.

5.6. Telemetry Receiving/Recording/Relaying:

5.6.1. The crew should hold at a place and altitude discussed in the mission planning unless conditions dictate a change.

5.6.2. Telemetry gathering often dictates bringing the wing up or down to maximize the antenna. Pilots may either use the rudder trim or manually step on the rudder to bring the wing up or down.

5.6.3. Care must be exercised when changing power during telemetry collection. If engines change with different deltas from each other your wing up/down will change noticeably.

5.6.4. As airspeed decreases below 130 Knots Indicated Airspeed (KIAS) (has been seen as high as 135 KIAS) the outboard spoilers become effective. If the aircraft is in a slip to bring the wing up for telemetry collection and the plane slows through this speed the spoilers become effective immediately and bobble the wing. This bobble equates to decreased performance of the telemetry antenna and therefore transitioning through these speeds should be avoided during telemetry receiving.

5.7. UHF Relay:

5.7.1. The E-9 is equipped with 8 UHF radios in the rear of its aircraft which gives the E-9 the capability of relaying four different pairs of frequencies. Four of the eight radios are labeled Air-to-Ground; the other four are labeled Air-to-Air. Each Air-to-Ground radio is paired with an Air-to-Air radio to allow for the relay. Due to this set up, radios are described as Air-to-Air 1, Air-to-Ground 1, and so on. Do not transmit on UHF 2 radio (copilot's side) if the same frequency is in one of the Air-to-Ground radios. Do not dial in any frequency into the UHF 2 radio that is in an Air-to-Ground radio being used as a relay. The Air-to-Ground radio antenna and the UHF 2 antenna are in close proximity and damage each other when broadcasting to close.

5.7.2. The frequencies placed in the relay radios need to be at least off by 10 Megahertz (i.e. do not have 290.9 and 287.5. You could have something lower than 280.9).

Chapter 6

AREA WORK

6.1. General. This chapter's purpose is to establish procedures for area work that may be accomplished: Steep turns and traffic pattern stall series.

6.2. Steep Turns. Steep turns will be limited to 60° of bank during level flight.

6.2.1. The goal of steep turns is to create an effective cross check sweep. The emphasis of this maneuver is to control the aircraft with the appropriate power settings and yoke inputs.

6.2.2. Prior to starting the maneuver, trim the airplane up to hold 150 KIAS. Begin the maneuver by rolling through 30° of bank. As you pass through 30° of bank you will have to increase back pressure on the yoke and add power (10%) to maintain altitude and airspeed. Complete the bank to 45° of bank. Most of your focus from this point on should be on your Attitude Indicator (ADI). Keeping the 45° of bank stable simplifies all other inputs. 20° prior to your roll out heading begin to take the bank out. As you pass through 30° of bank again most of your power and back pressure should return to original settings. End maneuver by rolling out wings level on altitude, airspeed, and heading.

6.3. Traffic Pattern Stall Series. The main goal of the traffic pattern stall series is to train a crew on the correct procedures for recovering from a near stall condition close to the ground. There are three different configurations the E-9 may be in while close to the ground--gear and no flaps, gear with flaps 5° (simulating a departure condition), and gear with flaps 15° (simulating a landing condition). These are the three series that will be accomplished in the traffic pattern stall series. Recovery procedures should be initiated at the stick shaker or airframe buffet, whichever occurs first.

6.3.1. Pre-Series Checks:

6.3.1.1. Accomplish traffic pattern stall series at an altitude between 5,000ft AGL and 15,000 ft Mean Sea Level (MSL). The crew will obtain an altitude block for accomplishing traffic pattern stalls. Accomplish the Descent check and the Before Landing check. At the "Briefing the approach" step in the descent check, the pilot will accomplish a thorough brief on the order of the series he will do, he will brief how he will stay in the area, he will brief the speeds of the stall and maximum power setting for the stall recovery, how the crew will recover, and how the recovery will end.

6.3.1.2. Do not trim the aircraft at speeds below 100 KIAS.

6.3.2. **Clean Stall Series.** Power settings to be used will be briefed prior to accomplishment if lower than flight manual "max" power. Try to maintain altitude as your airspeed bleeds off. To recover, the pilot flying will call for "max power" while advancing the throttles. The copilot fine tunes max continuous power. Upon achieving a positive rate the copilot will announce "positive rate" and the pilot will call for "Gear Up". Going through 130 kts the pilot will call, "Check flaps zero, climb power, after takeoff checks". The copilot will set climb power.

6.3.3. **Takeoff Stall Series.** Call for the Before Landing check. After calling for "Gear Down", set 15% torque to allow the stall to develop slowly. This is done with gear down and flaps 5°. To simu-

late a departure, begin a shallow climb as your airspeed bleeds below 100 kts. The crew may put in 20° of bank to simulate a turn after takeoff, if desired. To recover, the pilot flying will call for "max. power" while advancing the throttles. The copilot fine tunes max. continuous power. Upon achieving a positive rate the copilot will announce "positive rate" and the pilot will call for "Gear Up". Accelerate through flap retract speed. The copilot will call out the flap retract speed when achieved. The pilot will then call for flaps 0°. The copilot raises the flaps to zero. Going through 130 kts the pilot will call, "Check flaps zero, climb power, after takeoff checks." The copilot will set climb power.

6.3.4. **Landing Stall Series.** Call for the Before Landing check. After calling for "Gear Down", set 15% torque to allow the stall to develop slowly. Continue the Before Landing Check and call for flaps to 15 degrees. To simulate a landing scenario, start a slow descent with or without bank. Set 15% on the torque. Ensure the flaps are at 15 degrees prior to the stall. To recover, the pilot flying will call for "max power" while advancing the throttles. The copilot fine tunes max continuous power. Upon achieving a positive rate the copilot will announce "positive rate" and the pilot will call for "Gear Up." Accelerate through flap retract speed. The copilot will call out the flap retract speed when achieved. The pilot will then call for "flaps 0°." The copilot raises the flaps to zero. Going through 130 kts the pilot will call, "Check flaps zero, climb power, after takeoff checks." The copilot will set climb power.

6.3.5. **Post-Series Checks.** Complete the after takeoff/climb check.

Chapter 7

ABNORMAL OPERATING PROCEDURES

7.1. General. This section contains procedures to be followed when other than normal operations occur. It does not, however, replace or supersede procedures contained in the flight manual.

7.1.1. Aircraft will not be taxied with malfunctions that affect the gear, the nosewheel steering, or brake systems.

7.1.2. If in flight when malfunction occurs, after malfunctioning system is isolated and the fault corrected, that system should not be used again unless its use in a degraded mode is essential for recovery.

7.2. Takeoff Aborts. If a takeoff abort occurs (regardless of airspeed), the crew will accomplish the full stop taxiback checklist if another takeoff will be attempted. Determine maximum breaking energy and consider the possibility of cumulative effects of hot brakes if a subsequent abort occurs.

7.3. In-Flight Emergency Procedures (Actual):

7.3.1. When the crew experiences an in-flight emergency or believes a situation exists that would create an emergency, they will first and foremost maintain aircraft control, then analyze the situation, and finally take appropriate action.

7.3.2. Positive control of the aircraft will be maintained. A pilot will be identified as the flying pilot. The other pilot will assume copilot duties, run checklists, and analyze the situation. He must also back up the pilot. Extreme care must be exercised that the flying pilot does not fixate on the problem at the sacrifice of aircraft control.

7.3.3. Notification of Controlling Agencies. The pilot not flying should be prepared to furnish the following information to ATC prior to descent and landing:

7.3.3.1. Type aircraft and position.

7.3.3.2. Nature of the emergency.

7.3.3.3. Intentions.

7.3.3.4. Assistance required.

7.3.3.5. Number of people on board.

7.3.3.6. Fuel quantity and endurance.

7.3.3.7. ETA to destination.

7.3.4. Request for Emergency Medical Care. When any person aboard the aircraft requires emergency medical care, the pilot not flying will inform the station of intended landing as soon as possible so that the aircraft may be met by medical personnel. The request will include whether a flight surgeon is needed for a crew member.

7.3.4.1. Notify the TOP 3 and Supervisor of Flying (SOF) as applicable.

7.3.5. After landing with an unsafe gear indication, pilots will stop the aircraft on the runway and have the landing gear pinned prior to taxiing clear.

7.3.6. Taxiing with the number one engine shut down is not allowed if towing is available. If taxiing with the number one engine shut down, taxi at a speed no faster than a walking speed, ensure the #1 standby pump is on, and pressure is good on the number one hydraulic system.

7.4. Air Aborts. The mission will be aborted, regardless of apparent damage or subsequent normal operation, for any of the following:

7.4.1. Birdstrike/Foreign Object Damage.

7.4.2. Over-G. The aircraft will land when practical out of a straight-in approach.

7.4.3. Flight control system malfunctions.

7.4.4. Engine flameout or shutdown.

7.5. Severe Weather Penetration. Flight through severe weather should not be attempted. However, if unavoidable, prior to severe weather penetration, appropriate flight manual procedures will be accomplished.

7.6. Practice and Simulated Emergencies. Practice/simulated emergencies will not be accomplished with passengers onboard.

7.6.1. **Single Engine Simulation.** The following procedures will be used when simulating an engine failure in flight.

7.6.1.1. Retard the appropriate power lever to 20 percent torque.

7.6.1.2. Accomplish the appropriate checklist. (**NOTE:** The gear warning horn circuit breaker system will not be disabled.)

7.6.1.3. Qualified pilots/copilots may accomplish simulated single engine approaches, simulated single engine missed approaches, and simulated single engine full stop landings on dry runways. Weather must be 1000 ft and 2 miles or circling minimums., whichever is higher (Day or Night).

7.6.1.4. During a simulated engine out approach, if an unplanned go-around or missed approach is executed, both power levers will be used. Again, planned simulated single engine missed approaches are permitted but will be thoroughly briefed prior to the missed approach.

7.6.1.5. Simulated loss of an engine immediately after takeoff may be performed under the following conditions:

7.6.1.5.1. With an Instructor Pilot (IP) occupying either seat.

7.6.1.5.2. After reaching at least 300 feet AGL on takeoff.

7.6.1.5.3. Day only, 1000 ft and 2 miles or circling minimums., whichever is higher.

7.6.1.5.4. When airspeed is above minimum control speed or computed takeoff speed, whichever is higher.

7.6.1.6. At no time will more than one of the aircraft's engines be simulated out. Simulated engine-out missed approaches will be initiated above 300 feet AGL to ensure that the aircraft will not descend below 300 feet AGL throughout the maneuver. If the aircraft descends below 300 feet AGL for a planned full stop or touch-and-go landing and a missed approach is necessary, the missed approach will be accomplished using both engines.

7.7. Minimum Air Work Altitude. Unusual attitudes, stalls, steep turns, and flight at minimum control airspeed will be accomplished clear of clouds and at or above 5,000 feet AGL.

7.8. Practice Emergency Descents. Practice emergency descents will be completed clear of clouds and before reaching 10,000 feet AGL or the established Minimum Obstacle Clearance Altitude (MOCA), which ever is higher.

7.9. Touch-and-Go/Stop-and-Go Weather Minimums. Touch-and-go landings will not be accomplished unless the actual weather conditions are at or above published approach minimums for the approach being flown (minimum 2400 RVR) and useable runway length is at least 6,000 ft.

7.10. Practice No Flap Landings. Practice No flap landings will not be accomplished in the E-9 aircraft.

7.11. Divert Instructions. Refer to 53 WEG/WSEP Pilot Aid for divert data.

Chapter 8

LOCAL OPERATING PROCEDURES

8.1. General. This chapter is reserved for local unit procedures.

MARVIN R. ESMOND, Lt General, USAF
DCS, Air and Space Operations

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

AFPD 11-2, *Aircraft Rules and Procedures*

AFPD 11-4, *Aviation Service*

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AFI 33-360V1, *Publications Management Program*

ACCI 11-261, *Cross Country Operations*

ACCI 11-450, *Orientation Flight Program* (To be incorporated into AFI 11-401/ACC Sup 1)

ACCR 51-60V7, *E-9A (Airborne Platform)* (To be converted to AFI 11-2E-9V1, *E-9--Aircrew Training*)

Abbreviations and Acronyms

AC—Aircraft Commander

ACC—Air Combat Command

ACCI—Air Combat Command Instruction

ACCR—Air Combat Command Regulation

ADI—Attitude Indicator

AFI—Air Force Instruction

AFTO—Air Force Technical Order

AGL—Above Ground Level

ATC—Air Traffic Control

DH—Decision Height

ETA—Estimated Time of Arrival

FLIP—Flight Information Publications

GFR—Government Flight Representative

HAA—Height Above Airport

HAT—Height Above Touchdown

IMC—Instrument Meteorological Conditions

IP—Instructor Pilot

KIAS—Knots Indicated Airspeed

MAP—Missed Approach Point
MDA—Minimum Descent Altitude
MEL—Minimum Equipment List
MOCA—Minimum Obstacle Clearance Altitude
MSL—Mean Sea Level
RCR—Runway Condition Reading
SID—Standard Instrument Departures
SOF—Supervisor of Flying
TM—Telemetry
TOLD—Takeoff and Landing Data
UHF—Ultra High Frequency
VDP—Vision Descent Point
VFR—Visual Flight Rules
WSEP—Weapon System Evaluation Program
X/C—Cross Country

Terms

Aircraft Commander—A rated pilot who has completed E9 aircraft commander qualification requirements in ACCR 51-60V7 (to be converted to AFI 11-2E-9V1) and who has been designated by the Government Flight Representative (GFR)/operations officer to perform duties as pilot in command.

Copilot—A rated pilot who has completed E-9 copilot qualification requirements in ACCR 51-60V7 (to be converted to AFI 11-2E-9V1) and designated by the GFR/operations officer to perform copilot duties.

E-9A Airborne Platform and Telemetry Relay (AP/TM)—An E-9 aircraft (civilian equivalent is a DeHavilland Dash 8, 100 series) equipped with a sea surveillance radar, a phased array telemetry antenna, four independent UHF radio relay systems, and a drone control signal relay box. The sea surveillance radar is used to locate boats during range patrol for live missile shots and relay those boats via HF downlink to the range control room. The telemetry system simultaneously receives, records, and downlinks five spatially separated telemetry sources, each having up to two S-Band transmitters (ten total). The UHF relay system pairs 8 UHF signals to create four independent relays that increase the range of communications between users. The drone control relay box can be used as one of the key links to relay signals to and from unmanned drones.

Practice Emergency Procedure—Actual performance of the procedure as outlined in the flight manual.

Radar Operator—Technician, designated by the GFR/operations officer, who is responsible for operation of the sea surveillance radar and system setup of the UHF relay control panel.

Simulated Emergency Procedure—Any procedure performed by an aircrew which would refresh sequential events of the required procedure or produce an effect which would closely parallel the actual emergency, such as retarding the power lever to that degree which produces a drag equivalent to a

feathered propeller.

Simulated Single Engine Work—Practice in-flight engine shutdown is prohibited. Simulated loss of an engine is prohibited during night or IMC conditions.

Telemetry Operator—Technician responsible for operation of the telemetry system.

Addresses

HQ AFFSA/XOF
1535 Command Dr, Suite D-309
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HQ ACC/XOFS
205 Dodd Blvd, Suite 101
Langley AFB VA 23665-2789

53 WEG/CC and CD
1279 Florida Ave, Suite 231
Tyndall AFB FL 32403-5215

Attachment 2**GENERAL BRIEFING GUIDE****A2.1. General Briefing Guide:****MISSION DATA:**

1. Mission Objective
2. Time Hack/Date
3. Mission number
4. Airspace
5. Range Time
6. Start Time
7. Takeoff time
8. Departure
9. Drone takeoff
10. Aircraft tail number and call sign
11. Takeoff Weight
12. Takeoff Torque
13. Maximum Torque allowed
14. Takeoff Roll Distance
15. V_1 , V_2 , V_{se} , V_{app} , V_{se} , V_{ref} , V_{go} around
16. Current and forecast weather
17. Alternate or Take-off alternate required ? and if so, its weather.
18. NOTAMS
19. Personnel Equipment
20. FCIF/Pubs/Maps

Mission Specifics:

1. Brief preflight duties.
2. Brief engine start and taxi procedures.
 - a. Normal procedures.
 - b. "What if" emergencies.
3. Brief takeoff procedures.
4. Brief normal flight beginning at level off to include:

- a. Level off altitude and final SID procedures (brief DD Form 175 if filed).
- b. Range Patrol procedures.
- c. Communications Plan.
- d. Telemetry Procedures.
- e. TM/Relay Frequencies
- f. Recovery Procedures.
- g. Traffic pattern work.
- h. Deleted.
- i. Debrief time.

Other Topics:

1. Alternate Mission
2. Abnormal/Emergency Procedures
 - a. Aborts
 - b. Landing Immediately After Takeoff
 - c. RESCAP
 - d. Emergency/Alternate Airfields
 - e. EP of the Day

Special Subjects:

1. Crew Coordination
 - a. Time crunches for each crew member.
 - b. Task saturation for each crew member.
 - c. Prioritization
 - d. Situational Awareness.
 - e. Interphone procedures.

Attachment 3

PASSENGER BRIEFING GUIDE

A3.1. Passenger Briefing Guide:

1. Location and Use of Emergency Exits
2. No Smoking/Seat Belt Signs/Use of Seat Belts
3. Emergency Depressurization/Use of Oxygen
4. Location/Use of Life Rafts/Ditching Procedures
5. Access to Electronic Equipment in Flight
6. Use of Lavatory
7. Exiting Aircraft Precautions

Attachment 4**TAKEOFF BRIEFING GUIDE****A4.1. Takeoff Briefing Guide:**

1. V_1 , V_R , $V_{\text{flap retract}}$, $V_{\text{s.e.}}$ speeds
2. Normal Takeoff and Max Takeoff Torque Setting
3. Maneuvering Altitude (MSL)
4. Normal and Emergency Considerations
5. Landing Immediately After Takeoff Plan
6. Departure Clearance and Routing

Attachment 5

INSTRUMENT AND VISUAL APPROACH BRIEFING GUIDE

A5.1. Instrument and Visual Approach Briefing Guide:

1. Brief Final Approach Fix, planned descent rate , MDA/DH, VDP, MAP/Climbout Instructions
2. Update V_{ref} , $V_{flap\ retract}$, $V_{s.e.}$, V_{appr} , $V_{go\ around}$ Speeds if required
3. Landing/Go-around Intentions
4. Missed Approach Procedures

Attachment 6**MISSION DEBRIEFING GUIDE****A6.1. Mission Briefing Guide:**

1. Ground Procedures
2. Takeoff/Departure
3. Enroute Procedures
4. Recovery/Landing
5. General
 - a. Radio Procedures
 - b. Crew Coordination
6. Mission Accomplishment/Analysis
 - a. Mission Reconstruction
 - b. Mission Support
 - c. Objectives Achieved
 - d. Lessons Learned
 - e. Recommendations for Improvement
7. Comments/Questions

Attachment 7

IC 00-1 TO AFI 11-2E-9, VOLUME 3, E-9 OPERATIONS PROCEDURES

SUMMARY OF REVISIONS

This interim change (IC) 00-1 expands on crosswind limitations in paragraph 3.11., deletes waiver authority notes in Table 3.1., deletes the requirement to have circling minimums to accomplish touch and go landings in paragraph 3.15., changes review and approval procedures for cross country flights in paragraph 3.20., deletes references to stop and go landings, changes touch and go landing minimum runway length in paragraph 7.9., and corrects several typographical/administrative errors. See the last attachment of the publication, IC 00-1, for the complete IC. A bar (|) indicates revision from the previous edition.

1.1. Aircrew's Responsibility. This instruction, in conjunction with the flight manual and AFI 11-202V3, *General Flight Rules*, as supplemented and other governing directives, prescribes procedures for E-9 aircraft under most circumstances but is not to be used as a substitute for sound judgment or common sense. Operations or procedures not specifically addressed may be accomplished if they enhance safe, effective mission accomplishment.

3.6.2.3. Cargo, including baggage, will be safely secured.

3.9.3. The reverse taxi capability of the E-9 will not be utilized, except in an emergency.

3.11. Crosswind Limitations for All Takeoff and Landings. The following table will be used to determine maximum crosswind component allowed for takeoffs or full stop landings. Maximum crosswind for touch and go landings is 10 kts on a wet runway and 15 kts on a dry runway. (**NOTE:** For wet runway use RCR 12, for ice or snow on runway use RCR 05, for dry runway use RCR 23-26.)

Table 3.1. RCR Limits.

RCR	MAXIMUM CROSSWIND IN KNOTS
26-23	20
15-12	15
11-09	10
08-05	05
04-01	Takeoff/landing not authorized

3.13.2.4. **Take-off Procedures.** Regardless of who is making the takeoff, the AC will taxi and align the aircraft on the runway for takeoff. Transfer of directional control will occur once the aircraft is in position for takeoff. The pilot making the takeoff will smoothly advance the power levers to approximately takeoff torque then ask the pilot not flying to set take-off power. The non-flying pilot will position his hand at the base of the power levers, set takeoff power, and guard the power levers during the takeoff.

3.13.2.5. If an aborted take-off is necessary, the pilot making the take-off will promptly retard the power levers to disc while braking as necessary to stop the aircraft. Once the control column is locked the AC will take control of the aircraft.

3.13.2.6.2. "Rotate" at rotate speed. If V1 is above rotate speed, only rotate needs to be called.

3.15. Touch-and-Go Landings. Touch-and-go landings are authorized on runways with 6,000 ft or more between barriers. Touch-and-gos are not authorized when there are passengers who are not on the AFTO Form 781.

3.20.1. **Review/Approval.** All off-station training and cross country sorties that will remain overnight will be approved IAW ACCI 11-261, *Cross Country Operations*.

3.20.3. **Refueling and Servicing.** Aircrews should have refueling instructions, oil and oxygen servicing instructions, and extra oil onboard the aircraft. Crews will check the oil level within 30 minutes of engine shutdown.

7.9. Touch-and-Go Weather Minimums. Touch-and-go landings will not be accomplished unless the actual weather conditions are at or above published approach minimums for the approach being flown (minimum 2400 RVR) and useable runway length is at least 6,000 ft.

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FLIP Flight Information Publications
GFR Government Flight Representative
HAA Height Above Airport
HAT Height Above Touchdown
IMC Instrument Meteorological Conditions
IP Instructor Pilot
KIAS Knots Indicated Airspeed
MAP Missed Approach Point
MDA Minimum Descent Altitude
MEL Minimum Equipment List
MOCA Minimum Obstacle Clearance Altitude
MSL Mean Sea Level
RCR Runway Condition Reading
SID Standard Instrument Departures
SOF Supervisor of Flying
TM Telemetry
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