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Flying Operations

CV-22 EVALUATION CRITERIA

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFPD 11-2, *Aircraft Rules and Procedures*, and AFPD 11-4, *Aviation Service*. It establishes evaluation criteria for initial and periodic aircrew qualification for all CV-22 units. This publication does not apply to the Air National Guard. This publication does not apply to Air Force Reserve Command units. It is used in conjunction with Air Force Instruction (AFI) 11-202V2, *Aircrew Standardization/Evaluation Program*, and Major Command (MAJCOM) supplements thereto. 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 Air Force. The Paperwork Reduction Act of 1974 as amended in 1996 also affects this instruction. The System Of Records Notice F011 AF XO A, Aviation Resource Management Systems (ARMS) covers required information. The authority for maintenance of ARMS is 37 U.S.C. 301a (Incentive Pay), Public Law 92-204, Section 715 (Appropriations Act for 1973), Public Laws 93-570 (Appropriations Act for 1974), 93-294 (Aviation Career Incentive Act of 1974), DoD 7730.57 (Aviation Career Incentive Act of 1974 and Required Annual Report, February 5, 1976, with Changes 1 and 2), and Executive Order 9397 (SSN), as amended. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using AF Form 847, *Recommendation for Change of Publication*, to recommend changes to this instruction IAW AFI 11-215, *Flight Manuals Program (FMP).* All records created as a result of processes prescribed in this publication will be maintained in accordance with AFMAN 33-363, *Management of Records*, and disposed of accordance with the Air Force Records Disposition Schedule (RDS) located at **https://www.my.af.mil/afrims/afrims/afrims/rims.cfm**.

Chapter 1

GENERAL INFORMATION

1.1. General. This instruction establishes requirements and grading criteria for ground and flight phases of initial, requalification and periodic flight evaluations. Aircrew evaluations will be conducted in accordance with (IAW) this instruction and AFI 11-202V2, as supplemented. Specific areas for evaluation are prescribed to ensure an accurate assessment of the proficiency and capabilities of aircrews. Flight examiners use this AFI when conducting aircrew evaluations. Instructors use this AFI when preparing aircrews for qualification.

1.2. Key words and definitions.

1.2.1. "Will" and "Shall" indicate a mandatory requirement.

1.2.2. "Should" is normally used to indicate a preferred, but not mandatory, method of accomplishment.

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

1.2.4. "Note" indicates operations procedures, techniques, etc., considered essential to emphasize.

1.3. Waivers. Waiver authority for this publication is HQ AFSOC/A3, IAW AFI 11-202, Volume 2. Do not deviate from the policies and guidance in this AFI, except for safety or when necessary to protect the crew or aircraft from a situation not covered by this AFI and immediate action is required. Report deviations or exceptions without waiver through channels to MAJCOM Standardization/Evaluation function who in turn, notifies HQ AFSOC/A3V for follow-on action, if necessary.

1.4. Revisions. Personnel are encouraged to submit proposed changes through stan/eval channels IAW AFI 11-215. Use AF IMT 847, *Recommendation for Change of Publication*, for comments and suggested improvements.

1.5. Supplements. Units are encouraged to supplement this instruction with standard evaluation profiles that best fit the unit's mission, equipment, and location. MAJCOMs will coordinate with HQ Air Force Special Operations Command (AFSOC)/A3V and HQ USAF/A3OT prior to publishing supplements. Units below MAJCOM level will forward one copy of each supplement to their MAJCOM OPR for pre-publication review.

1.6. Evaluation Procedures. Flight examiners will use the evaluation criteria in this volume to conduct all flight, aircrew training device (ATD), and emergency procedure evaluations (EPE). Flight examiners will brief the examinee on the conduct, purpose, and requirements of the evaluation, as well as all applicable evaluation criteria prior to flight. The examinee will accomplish all required mission planning. If an Operations Planning Team or Deployment Planning Team accomplishes mission planning, the examinee is ultimately responsible for the accuracy and completeness of all mission-planning paperwork. Flight examiners will be furnished a copy of necessary charts, flight logs, mission folders, and any additional items they deem necessary.

1.6.1. Flight examiners will ensure all required training and documentation is complete prior to initial/requalification evaluations.

1.6.2. Unless requested by examinee and approved by squadron operations officer or designated representative, the examinee will be current for all events evaluated during a periodic evaluation.

1.6.3. Flight examiners will thoroughly debrief/critique all aspects of the flight. During the critique, the flight examiner will review the examinee's overall rating, specific deviations, area/sub area grades assigned, and any additional training required.

1.7. Flight Examiner Role. The pilot flight examiner should occupy a primary crew position during evaluations. Flight Engineer examiners will not occupy a primary crew position while administering evaluations.

1.7.1. Flight examiners will not intentionally fail any equipment during flight evaluations, but may deny the use of systems not affecting safety of flight. (Exception: During evaluations conducted in ATDs, equipment may be failed or disabled.)

1.7.2. During pilot initial or requalification evaluations either a qualified instructor pilot or flight examiner will be at a set of controls.

1.8. Grading Instructions. To ensure standard and objective evaluations, flight examiners will be thoroughly familiar with the prescribed evaluation criteria. Flight examiner judgment will be the determining factor in arriving at the overall grade.

1.8.1. The evaluator will base tolerances for in-flight parameters on conditions of smooth air and a stable aircraft. Do not consider a momentary deviation from tolerances provided the examinee applies prompt corrective action and such deviations do not jeopardize flying safety. The evaluator will consider cumulative deviations when determining the overall grade.

1.8.2. Q is the desired level of performance. The examinee demonstrated a satisfactory knowledge of all required information, performed aircrew duties within the prescribed tolerances, and accomplished the assigned mission.

1.8.3. Q- indicates the examinee is qualified to perform the assigned area/subarea tasks, but requires debriefing or additional training as determined by the flight examiner. Deviations from established standards must not exceed the prescribed Q- tolerances or jeopardize flight safety.

1.8.4. U indicates a breach of flight discipline, performance outside allowable parameters, or deviations from prescribed procedures/tolerances that adversely affected mission accomplishment or compromised flight safety. An examinee receiving an area/subarea grade of U normally requires additional training. When, in the judgment of the flight examiner, additional training will not constructively improve examinee's performance, it is not required. In this case, the flight examiner must thoroughly debrief the examinee.

1.9. Critical Areas. Critical areas require adequate accomplishment by the aircrew member in order to successfully achieve the mission objectives. If an aircrew member receives an unqualified grade in any critical area, the overall grade for the evaluation will also be unqualified. Critical areas are identified by (**CRITICAL**) in the area title and by shading of the Q- block on the appropriate evaluation worksheet.

1.9.1. Safety/judgment, aircrew discipline, airmanship/situational awareness (SA), instructional abilities and boldface are considered critical. If one of these sub-areas is graded U, then the overall grade for the evaluation will be Q-3.

1.10. Evaluation Requirements. Conduct flight evaluations as specified in AFI 11-202V2 as supplemented, the specific crew position chapter and associated tables of this volume. Examiners will use the criteria contained in this volume to accomplish all flight, ATD, and emergency procedures evaluations. Do not conduct two consecutive evaluations in the simulator. (Exception: Instrument (INSTM) evaluations). Initial qualification (QUAL) Mission (MSN) and Special Mission Event (SME) evaluations will be accomplished in the aircraft.

1.10.1. Alternate Method. When it is impossible to evaluate an area in flight due to equipment malfunctions, operational requirements, scheduling restrictions, or weather, the area may be evaluated by an alternate method (i.e., ATD, or verbal examination). If, in the flight examiner's judgment, an item cannot be adequately evaluated by an alternate method, complete the evaluation on an additional flight.

1.10.2. If an area/subarea was not able to be evaluated in flight, and the event is certified for evaluation purposes in the simulator, it can be evaluated in the simulator to complete the evaluation. Document in the comments section of AF IMT Form 8/8a, *Certificate of Aircrew Qualification,* which portion(s) of evaluation were conducted in simulator.

1.11. Unsatisfactory Performance. If the flight examiner observes an aircrew counterpart jeopardizing safety, the examiner will assume the duties of that aircrew member (provided the examiner's flight duty period (FDP) does not exceed AFI 11-202V3 *General Flight Rules* maximum FDP for an un-augmented crew). This does not mean the examiner must assume the examinee's position any time unsatisfactory performance is observed. If the examiner feels the examinee can continue safely with supervision, the examiner is not required to assume the examinee's duties. However, if the flight examiner assumes the examinee's duties, assign a Qualification Level 3 (Q-3) as the overall grade.

1.11.1. Evaluators must report deviations/discrepancies from established procedures/directives in any area, regardless of the individual's crew specialty, to squadron/group commander, along with evaluator's recommendation for corrective action, IAW AFI 11-202V2 and MAJCOM supplement.

1.12. Additional Training. Flight examiners are responsible for assigning additional training at their discretion. Document additional training and completion IAW AFI 11-202V2 and MAJCOM supplement. Any approved training device or medium may be used for additional training.

1.12.1. Additional training may be accomplished on the same flight as the evaluation, provided the unique situation presents a valuable training opportunity and the discrepancy requiring the additional training will not result in overall Q-3 evaluation. This option requires flight examiner discretion and judicious application. The examinee must be informed when the additional training begins and ends.

1.13. Rechecks. Rechecks will normally be administered by a flight examiner other than the one who administered the original evaluation.

1.14. Flight Examiners.

1.14.1. Evaluators must be instructor qualified in a given event prior to acting as an evaluator in the event.

1.14.2. Certified evaluators who subsequently add special mission instructor or other instructor qualifications are automatically certified to evaluate these new qualifications.

1.14.3. For evaluations administered by unit evaluators to unit members the unit chief of stan/eval flight examiner, or squadron commander determine when the evaluation is complete. For evaluations administered by outside flight examiners (MAJCOM, cross command, ASEV etc.) the evaluator determines when the evaluation is complete.

1.15. Special Qualifications. Special qualification evaluations are administered for Special Mission Events. These events are not universal to all crewmembers. Special qualification evaluations may be conducted separately or in conjunction with qualification/mission evaluations. After qualification, areas can be graded as part of periodic mission evaluations. There are no requisites for special qualification evaluations unless specified. Refer to appropriate crew position chapter for any special qualification evaluation requirement, and AFI 11-202 Vol 2 for AF Form 8/8a procedures.

1.15.1. Special mission evaluations are defined per AFI 11-2CV-22V1 *CV-22 Aircrew Training* and this publication; and results in an AF Form 8/8a. Special mission evaluations will be annotated as SPOT evaluations in the Flight Phase block of the AF Form 8/8a and the Type of Evaluation block on the AF Form 942. If SME current/qualified and the SME is accomplished during the evaluation profile, the SME will be evaluated during the MSN evaluation but annotated separately on the AF Form 8/8a in the Mission Description.

Chapter 2

ALL EVALUATIONS

2.1. General. The general grading criteria contained in this chapter applies to all crew positions and all evaluations. The examinee must satisfactorily demonstrate the ability to perform required duties safely and effectively. This includes appropriate aircraft systems operation IAW applicable technical orders, instructions, and directives.

2.2. Requirements. Evaluate all crewmembers on areas listed in **Table 2.1**.

2.2.1. **Examinations.** All crew members will complete open and closed book examinations as a requisite to periodic evaluations IAW AFI 11-202V2 and applicable supplements.

2.2.2. Emergency Procedures Evaluation. An EPE is a requisite for all QUAL and MSN evaluations except special mission evaluations. EPEs may be conducted verbally, in-flight, in a simulator, or by another method determined by the examiner or unit stan/eval. Operations Group stan/eval may develop EPE guides for each crew position for flight examiner use. EPEs should be scenario driven, and tailored to the specific crew position. The EPE will include areas commensurate with the examinee's qualification and experience level. Examiners should include other general knowledge areas as well. For mission evaluations, evaluate mission-specific equipment and situations. EPEs will include sufficient in-flight and ground emergencies to evaluate the examinee's knowledge of systems and procedures to the flight examiner's satisfaction.

2.2.2.1. Examinees may use publications that are normally available in-flight. The examinee must recite all BOLDFACE items from memory and should provide the initial steps of emergency procedures that, in the opinion of the examiner, would not allow time for reference.

2.2.3. **Publications Check.** Required for all QUAL or combined QUAL/MSN evaluations as outlined in area 12 of General Grading Areas and AFI 11-215.

2.2.4. **Cockpit/Crew Resource Management (CRM).** In accordance with AFI 11-290, *Cockpit/Crew Resource Management Training Program*, crew resource management skills will be evaluated during initial and periodic evaluations. CRM skills are integral to all phases of flight; therefore, no specific area titled CRM exists. CRM skills are imbedded within specific grading criteria (mission planning, airmanship/situational awareness, crew coordination, communication, risk management/decision making, task management, and briefing/debriefing) and include all of the skills listed on the AF IMT Form 4031, *CRM Skills Criteria Training/ Evaluation Form*. Therefore, use of the AF IMT Form 4031 is unnecessary for evaluations.

2.2.5. **Formal Course Evaluations.** All required areas must be evaluated for the type of evaluation flown, IAW guidance in this volume. Grade training objectives and related areas using the performance criteria in this volume.

Table 2.1. General Grading Areas (all Crew Positions and all Evaluations).

Area	Notes	Grading Areas

Area	Notes	Grading Areas
1	1	Safety/Judgment – (**CRITICAL)**
2	1	Aircrew Discipline – (**CRITICAL)**
3	1	Airmanship/Situational Awareness – (**CRITICAL)**
4	2, 3	Boldface – (**CRITICAL)**
5	2	Emergency Procedures Evaluation
6	1	Crew Coordination
7	2	Mission Planning
8	2	Knowledge of Directives
9	1	Preflight
10	1	Use of Checklist
11	2	Forms/Reports/Logs
12	2	Personal/Professional Equipment/Flight Publications
13	2	Emergency and Life Support Equipment/Procedures
14	2	Briefings/Debriefings/Forms
15	2	Classified Material/Operations Security
16	2, 3	Anti-Hijacking/Aircraft Security
17	1	Communication
18	2	Risk Management/Decision Making
19	1	Task Management

Notes:
1. Required in-flight or ATD.
2. Required in-flight or alternate method.
3. Only required for QUAL evaluation.

2.3. General Grading Criteria.

2.3.1. **Area 1. Safety/Judgment - (CRITICAL).**

2.3.1.1. Q. Was aware of, and complied with all safety factors required for safe aircraft/ equipment operation and mission accomplishment. Identified and assessed risk appropriately. Properly considered consequences of decisions.

2.3.1.2. U. Not aware of, or did not comply with all safety factors required for safe aircraft/ equipment operation or mission accomplishment. Failed to properly identify and assess risk. Failed to consider consequences of decisions. Operated the aircraft/equipment in a dangerous manner.

2.3.2. **Area 2. Aircrew Discipline - (CRITICAL).**

2.3.2.1. Q. Demonstrated strict professional flight and crew discipline throughout all phases of the mission.

2.3.2.2. U. Failed to exhibit strict flight and crew discipline. Violated or ignored rules or instructions.

2.3.3. **Area 3. Airmanship/Situational Awareness - (CRITICAL).**

2.3.3.1. Q. Executed the assigned mission in a timely, efficient manner. Anticipated situations that would have adversely affected the mission, and corrected them. Made appropriate decisions based on available information. Recognized the need for action. Aware of performance of self and other flight members. Aware of on-going mission status. Recognized, verbalized and acted upon unexpected events.

2.3.3.2. U. Decisions or lack thereof caused failure to accomplish assigned mission. Did not recognize the need for action. Not aware of performance of self and other flight members. Not aware of on-going mission status. Failed to recognize, verbalize and act on unexpected events.

2.3.4. **Area 4. Boldface – (CRITICAL).**

2.3.4.1. Q. Able to recite/write the proper emergency boldface actions in the correct sequence with no discrepancies (not necessarily a verbatim response).

2.3.4.2. U. Failed to recite/write emergency boldface items in the correct sequence. Discrepancies in the procedure.

2.3.5. **Area 5. Emergency Procedures Evaluation.**

2.3.5.1. Q-1. Satisfactory systems/procedural knowledge. Operated within prescribed limits and correctly diagnosed problems. Performed and/or explained proper corrective action, in the proper sequence, for each type of malfunction. Accomplished all required checklists and/or effectively used available aids. Thoroughly described the location, use and limitations of emergency equipment.

2.3.5.2. Q-2. Marginal systems/procedural knowledge. Slow to analyze problems or apply proper corrective actions. Did not effectively use checklist and/or available aids. Minor omissions or deviations in describing the location, use and limitations of emergency equipment.

2.3.5.3. Q-3. Unsatisfactory systems/procedural knowledge. Failed to analyze problem or take corrective action. Failed to accomplish required checklists and/or unable to locate information in available aids. Major omissions or deviations in describing the location, use and limitations of emergency equipment.

2.3.6. **Area 6. Crew Coordination.**

2.3.6.1. Q. Provided direction/information when needed. Adapted to meet new situational demands and focused attention on the task. Knew assigned task of other crew members. Asked for inputs, and made positive statements to motivate crew members.

2.3.6.2. Q-. Crew coordination was limited though adequate to accomplish the mission. Provided limited direction/information when needed. Slow to adapt to meet new situational demands due to limited focus on task. Did not consistently seek inputs from other crew members. Limited effort to motivate crew members through positive statements.

2.3.6.3. U. Did not provide direction/information when needed. Did not adapt to meet new situational demands and focus attention on the task. Did not seek inputs or made no effort to make positive statements to motivate crew members. Lack of crew coordination resulted in significant degradation of mission accomplishment.

2.3.7. **Area 7. Mission Planning.**

2.3.7.1. Q. Clearly defined the mission overview and mission goals. Provided specific information on required tasks. Solicited feedback from other crew members to ensure understanding of mission requirements. Thoroughly critiqued plans to identify potential problem areas and ensured all had understanding of possible contingencies. Checked all factors applicable to flight such as Flight Information Publication, weather, Notice To Airman System, alternate airfields, flight logs, performance data, fuel requirements, and charts. When required, extracted necessary information from air tasking order/frag. Aware of the available alternatives if unable to complete the flight/mission as planned. Read and initialed all items in the Flight Crew Information File/read files.

2.3.7.2. Q-. Did not adequately define the mission overview and mission goals. Potential problem areas partially addressed or not at all. Did not adequately solicit feedback or critique the plans to ensure understanding of possible contingencies. Minor errors or omissions detracted from mission effectiveness, but did not affect mission accomplishment. Limited knowledge of performance capabilities or approved operating procedures/rules.

2.3.7.3. U. Did not define the mission overview and goals. Lack of specific information on required tasks. Did not solicit feedback from other crew members to ensure understanding. Did not critique plans to identify potential problem areas. Major errors or omissions would have prevented a safe or effective mission. Unsatisfactory knowledge of operating data or procedures.

2.3.8. **Area 8. Knowledge of Directives.**

2.3.8.1. Q. Prepared and completed mission in compliance with existing instructions and directives. Demonstrated knowledge of operating procedures and restrictions and where to find them in the correct publications.

2.3.8.2. Q-. Minor deviations from procedures. Unsure of directives and/or had difficulty locating information in appropriate publications. Any instances of non-compliance did not jeopardize safety.

2.3.8.3. U. Unaware of procedures and/or could not locate them in the appropriate publication in a timely manner. Failed to comply with a procedure that could have jeopardized safety or mission success.

2.3.9. **Area 9. Preflight.**

2.3.9.1. Q. Completed systems preflight/inspections IAW tech orders, checklists, and instructions. Individual technique complied with established procedures.

2.3.9.2. Q-. Minor deviations from established systems pre-flight/inspection. Individual technique was safe, but detracted from established procedures. Used individual technique instead of established procedure and was unaware of differences.

2.3.9.3. U. Failed to preflight critical component or could not conduct a satisfactory preflight/inspection. Individual techniques unsafe and/or in violation of established procedures.

2.3.10. **Area 10. Use of Checklist.**

2.3.10.1. Q. Consistently used correct checklist, gave correct responses and accomplished appropriate actions at the appropriate time throughout the mission.

2.3.10.2. Q-. Checklist responses were untimely and/or crew member required continual prompting for correct responses/action.

2.3.10.3. U. Used incorrect checklist or consistently omitted checklist items. Was unable to identify the correct checklist to use for a given situation. Omitted or did not complete checklist(s) at the appropriate time.

2.3.11. **Area 11. Forms/Reports/Logs.**

2.3.11.1. Q. All required forms and/or flight plans were complete, accurate, readable, and accomplished on time IAW applicable directives. Relayed an accurate debrief of significant events to applicable agencies (Intel, Weather, Maintenance, automated integrated radar control for air traffic (AIRCAT), etc.).

2.3.11.2. Q-. Minor errors on forms and/or flight plans did not affect conduct of the flight/mission. Incorrectly or incompletely reported some information due to minor errors, omissions, and/or deviations.

2.3.11.3. U. Did not accomplish required forms and/or flight plans. Omitted or incorrectly reported significant information due to major errors or omissions.

2.3.12. **Area 12. Personal/Professional Equipment/Flight Publications.** ***NOTE:*** Required flight publications are specified in AFI 11-2CV-22Vol 3 *CV-22 Operations Procedures.*

2.3.12.1. Q. Had all required personal and professional equipment. Displayed satisfactory knowledge of the care and use of such equipment and the contents of required publications. Required equipment inspections were current. Publications were current, contained all supplements/changes and were properly posted.

2.3.12.2. Q-. Did not have all required personal/professional equipment or had limited knowledge of the use or the content of required publications. Publications contained deficiencies that would not impact flight safety or mission accomplishment.

2.3.12.3. U. Did not have required personal/professional equipment essential for the mission. Unsatisfactory knowledge of the care and use of equipment or the content of required publications. Equipment inspections were overdue or equipment was unserviceable. Publications were out dated and/or contained deficiencies that would impact flight safety or mission accomplishment.

2.3.13. **Area 13. Emergency and Life Support Equipment/Procedures.**

2.3.13.1. Q. Satisfactory systems/procedural knowledge. Displayed satisfactory knowledge of location and use of emergency and life support equipment. Operated within prescribed limits and correctly diagnosed problems. Performed/explained proper wear, use, and corrective action for each type of equipment/malfunction. Effectively used available aids.

2.3.13.2. Q-. Marginal systems/procedural knowledge. Limited knowledge of location and use of emergency and life support equipment. Operated within prescribed limits but

was slow to analyze problems or apply proper corrective actions did not effectively use, omitted, or deviated in use of checklist and/or available aids.

2.3.13.3. U. Unsatisfactory systems/procedural knowledge. Displayed unsatisfactory knowledge of emergency and life support equipment. Exceeded flight manual limitations. Unable or failed to analyze problem or take proper corrective action. Did not use checklist and/or available aids.

2.3.14. **Area 14. Briefings/Debriefings/Forms.**

2.3.14.1. Q. Ensured briefing contained all applicable information. Prepared at briefing time. Briefings effectively organized and professionally presented in a logical sequence. Presented all objectives, training events and special interest items. Effectively used available briefing aids. Debriefed mission using specific, non-threatening positive and negative feedback of team and individual performance. Provided specific ways to correct errors. Asked for inputs from others. Re-capped key points and compared mission results with mission objectives. Properly filled out all appropriate forms.

2.3.14.2. Q-. Omitted items pertinent but not critical to the mission. Some difficulty communicating clearly. Did not make effective use of available briefing aids. Limited discussion of training events or special interest items. Dwelled on non-essential items. Not fully prepared for briefing. Debriefed mission without specific, non-threatening positive and negative feedback on individual and team performance. Did not consistently seek input from others. Incomplete or inadequate re-cap of key points and comparison of mission results to mission objectives. Required help/instruction on filling out required forms.

2.3.14.3. U. Failed to conduct/attend required briefings. Failed to use appropriate briefing aids. Omitted essential items or did not correct erroneous information that could affect mission accomplishment. Demonstrated lack of knowledge of subject. Briefing was poorly organized and not presented in a logical sequence. Presented erroneous information that would affect safe/effective mission accomplishment. Presentation created doubts or confusion. Failed to discuss training events or special interest items. Late crew transport due to excessively long briefing. Did not provide non-threatening positive and negative feedback during debriefing. Did not seek input from others. Did not re-cap key mission points nor compare mission results to mission objectives. Had limited to no knowledge of and did not properly complete required forms.

2.3.15. **Area 15. Classified Material/Operations Security.**

2.3.15.1. Q. Demonstrated thorough knowledge of communications/operations security procedures and courier procedures (if applicable). Had positive control of classified documents and information used throughout the mission. Properly stored, handled, and/or destroyed all classified/Communication Security (COMSEC) material or information generated during the mission. Practiced sound COMSEC/Operations Security (OPSEC) during all phases of the mission. Identified, requested and obtained all cryptological material required for the mission.

2.3.15.2. Q-. Limited knowledge of COMSEC/OPSEC procedures and/or courier procedures (if applicable). Limited knowledge of proper storage, handling, and destruction procedures would not have resulted in compromise of classified

material/COMSEC, and did not impact mission accomplishment. Identified cryptological material required for mission, but was slow in requesting/obtaining material or did so only after being prompted.

2.3.15.3. U. Unsatisfactory knowledge of COMSEC/OPSEC. Classified documents, COMSEC or information would have been compromised as a result of improper control by examinee. Unfamiliarity with OPSEC procedures had or could have had a negative impact on mission accomplishment. Failed to identify, request or obtain all cryptological materials required for the mission.

2.3.16. **Area 16. Anti-Hijacking/Aircraft Security.**

2.3.16.1. Q. Explained proper anti-hijacking/aircraft security procedures.

2.3.16.2. Q-. Difficulty explaining proper anti-hijacking/aircraft security procedures.

2.3.16.3. U. Could not explain proper anti-hijacking/aircraft security procedures.

2.3.17. **Area 17. Communication.**

2.3.17.1. Q. Communicated using precise, standard terminology. Acknowledged all communications. Asked for/provided clarification when necessary. Stated opinions/ideas. Asked questions when uncertain. Advocated specific courses of action. Did not let rank affect mission safety.

2.3.17.2. Q-. Unclear or incomplete communication led to repetition or misunderstanding. Slow to ask for or give constructive feedback/clarifications. Inconsistent use of precise, standard terminology. Did not always state opinions/ideas, ask questions when uncertain or make positive statements to flight members.

2.3.17.3. U. Failed to communicate effectively. Continuously interrupted others, mumbled, and/or conduct/attitude was detrimental to communication among crew members. Withheld information and failed to ask for/respond to constructive criticism. Failed to use precise, standard terminology. Repeatedly failed to acknowledge communications. Did not state opinions, ask questions when unsure or attempt to motivate flight members using positive statements.

2.3.18. **Area 18. Risk Management/Decision Making.**

2.3.18.1. Q. Identified contingencies and alternatives. Gathered and cross checked relevant data before deciding. Clearly stated problems and proposed solutions. Investigated doubts and concerns of crew members. Used facts to come up with solution. Involved and informed necessary crew members when appropriate. Coordinated mission crew activities to establish proper balance between command authority and crew member participation, and acted decisively when the situation required. Clearly stated decisions, received acknowledgement, and provided rationale for decisions.

2.3.18.2. Q-. Partially identified contingencies and alternatives. Made little effort to gather and cross check relevant data before deciding. Did not clearly state problems and propose solutions. Did not consistently use facts to come up with solutions. Did not effectively inform crew members when appropriate. Did not effectively coordinate mission crew activities to establish a proper balance between command authority and crew member participation, and acted indecisively at times.

2.3.18.3. U. Failed to identify contingencies and alternatives. Made no effort to gather and cross check relevant data before deciding. Did not inform necessary crew members when appropriate. Did not use facts to come up with solution. Avoided or delayed necessary decisions which jeopardized mission effectiveness. Did not coordinate mission crew activities to establish proper balance between command authority and crew member participation; acted indecisively.

2.3.19. **Area 19. Task Management.**

2.3.19.1. Q. Correctly prioritized tasks. Used available resources to manage workload. Asked for assistance when overloaded. Clearly stated problems and proposed solutions. Accepted better ideas when offered. Used facts to come up with solution. Clearly communicated and acknowledged workload and task distribution. Demonstrated high level of vigilance in both high and low workload conditions. Prepared for expected or contingency situations. Avoided the creation of self-imposed workload/stress. Recognized and reported work overloads in self and others.

2.3.19.2. Q-. Did not consistently and correctly prioritize tasks. Did not effectively use available resources to manage workload. Did not clearly communicate and acknowledge workload and task distribution. Did not consistently demonstrate high level of vigilance in both high and low workload conditions. Slow to prepare for expected or contingency situations. Created some self-imposed workload/stress due to lack of planning. Slow to recognize and report work overloads in self and others.

2.3.19.3. U. Failed to correctly prioritize tasks. Did not use available resources to manage workload. Did not communicate and acknowledge workload and task distribution. Did not demonstrate high level of vigilance in both high and low workload conditions. Extremely slow to prepare for expected or contingency situations. Created self-imposed workload/stress due to lack of planning. Failed to recognize and report work overloads in self and others.

Chapter 3

INSTRUCTOR EVALUATIONS

3.1. General. The instructor grading criteria apply to initial, requalification, and all periodic instructor evaluations. The examinee must demonstrate the ability to instruct in a safe and effective manner.

3.2. Requirements. Evaluate instructors on areas listed in **Table 3.1**. Instructor candidates must be qualified in all areas they will instruct and should have a solid understanding of systems, procedures, and techniques. Initial instructor evaluations may be a stand-alone evaluation or accomplished in conjunction with a periodic qualification/mission evaluation. Accomplish periodic instructor evaluations in conjunction with periodic qualification/mission evaluations IAW AFI 11-202V2 (and applicable supplements). If able, evaluate instructor candidates instructing actual students. Otherwise, the flight examiner may act as the student. An instructor or evaluator graded Q-2 on any evaluation will not perform instructor or evaluator duties until additionl training is completed. Reference AFI 11-202 Vol 2 for restrictions to instructors who fail an evaluation for any item in **Table 3.1** RQ INSTR will not be used for loss of qualification due to expiration of required periodic evaluation or loss of currency. Only annotate RQ/INSTR if requalification is required due to a failure of instructor ability. For all other RQ evaluations, annotate as RQ (QUAL, MSN etc.)

3.2.1. For all evaluations: Evaluate instructor candidates on instructor performance during a representative sample of unit's basic/mission maneuvers as appropriate. The examiner will act as student during maneuvers considered high risk. Qualified instructors will be evaluated to instructor standards during all periodic evaluations.

3.2.2. There are no requisites for initial instructor evaluations. Requisites for periodic evaluations administered to qualified instructors will be completed IAW the requirements for the type (QUAL/INSTM/MSN) evaluation being administered.

3.2.3. Initial Qualification. Accomplish the initial instructor evaluation on a mission that permits accomplishment of all required instructor areas.

3.2.3.1. Initial/Requal instructor pilot evaluations require demonstration and/or instruction provided on a representative sample of QUAL/INSTM/MSN tasks and any Special Mission Events they will instruct.

3.2.4. Periodic. Qualified instructors will be evaluated on all areas per **Table 3.1** during all periodic evaluations. Instuctors will, at a minimum, demonstrate instructional ability and maneuvers/procedures in flight or in an ATD, all other areas may be evaluated via alternate method.

3.3. Instrument. Instrument instructor evaluations may be accomplished in the aircraft or an ATD. Evaluate instructor pilot candidate's instructional ability during a representative sample of emergency and instrument procedures.

3.4. Qualification. Initial qualification instructor evaluations will be accomplished in the aircraft; periodic and requalification evaluations may be accomplished in either the aircraft or an ATD per **paragraph 1.10** of this instruction.

3.5. Mission. Mission instructor evaluations will be accomplished in the aircraft. Evaluate instructor pilot candidate's instructional ability during a representative sample of unit's mission. Pilots must be aircraft commander qualified in a special mission prior to receiving instructor qualification/certification in that mission.

Table 3.1. Instructor Evaluation Grading Areas (all Crew Positions).

Area	Notes	Grading Areas
20	2	Mission Preparation
21	1	Instructional Ability **(CRITICAL)**
22	2	Instructor Knowledge
23	2	Briefings/Debriefings/Critique/Forms
24	1	Demonstration of Maneuvers/Procedures
25-29		Reserved for future use
Notes: 1. Required in-flight or ATD 2. Required in-flight or alternate method		

3.6. Instructor Grading Criteria.

3.6.1. **Area 20. Mission Preparation.**

3.6.1.1. Q. Thoroughly reviewed student's training documentation. Ascertained student's present level of training. Assisted student in pre-mission planning and allowed student time for questions. Correctly prioritized training events. Gave student a clear idea of mission training objectives.

3.6.1.2. Q-. Did not thoroughly review student's training folder or correctly ascertain student's present level of training. Caused student to hurry pre-mission planning. Poorly prioritized training events. Training plan/scenario made poor use of time.

3.6.1.3. U. Did not review student's training folder. Did not ascertain student's present level of training. Did not assist student with pre-mission planning or did not allow time for questions. Did not prioritize training events. Failed to give student a clear idea of mission training objectives, methods, and sequence of events.

3.6.2. **Area 21. Instructional Ability. (CRITICAL)**

3.6.2.1. Q. Demonstrated proper instructor ability and communicated effectively. Provided appropriate guidance when necessary. Planned ahead, and provided accurate, effective, and timely instruction. Identified and corrected potentially unsafe maneuvers/situations.

3.6.2.2. U. Failed to effectively communicate, provide timely feedback. Performed or taught improper procedures/techniques/tactics to the student. Did not provide corrective action when necessary. Did not plan ahead or anticipate student problems. Did not identify unsafe maneuvers/situations in a timely manner. Made no attempt to instruct.

3.6.3. **Area 22. Instructor Knowledge.**

3.6.3.1. Q. Demonstrated a high level of knowledge of all applicable aircraft systems, techniques, procedures, missions, publications and tactics to be performed. Completed appropriate training records accurately. Comments were clear and pertinent.

3.6.3.2. Q-. Minor errors/deficiencies in knowledge of above areas did not affect safety or adversely affect student progress. Minor errors or omissions in training records. Comments were incomplete or slightly unclear.

3.6.3.3. U. Lack of knowledge of publications or procedures seriously detracted from instructor effectiveness. Could not apply knowledge of above areas. Did not complete required forms or records. Comments were invalid, unclear, or did not accurately document performance.

3.6.4. **Area 23. Briefings/Debriefings/Critique/Forms.**

3.6.4.1. Q. Briefings were well organized, accurate, and thorough. Reviewed student's present level of training and defined mission events to be performed. Showed a satisfactory ability during the critique to reconstruct the flight, offer mission analysis, and provide guidance where appropriate. Training grade reflected the actual performance of the student relative to the standard. Pre-briefed the student's next mission, if required. Properly completed training folders/records, understood grading policies and procedures.

3.6.4.2. Q-. Minor errors or omissions in briefings and/or critique did not affect safety or adversely affect student progress.

3.6.4.3. U. Briefings/debriefings were marginal or non-existent; major errors or omissions in briefings/debriefings. Did not review student past performance. Analysis of events or maneuvers was incomplete, inaccurate, or confusing. Training grade did not reflect actual performance of student. Overlooked or omitted major discrepancies. Incomplete pre-briefing of student's next mission, if required. Improperly completed training folders/records, failed to understand grading policies and procedures.

3.6.5. **Area 24. Demonstration of Maneuvers/Procedures.**

3.6.5.1. Q. Effectively demonstrated procedures and techniques. Provided concise, meaningful, and timely in-flight commentary. Had thorough knowledge of applicable aircraft systems, procedures, publications, and instructions.

3.6.5.2. Q-. Performed required maneuvers/procedures with minor deviations from prescribed parameters. In flight commentary was sometimes unclear or poorly timed, interfering with student performance. Discrepancies in the above areas did not adversely affect safety or student progress.

3.6.5.3. U. Failed to properly perform required maneuvers/procedures. Made major procedural errors. Did not provide in flight commentary and/or in flight commentary was incorrect or unsafe. Insufficient knowledge of aircraft systems, procedures, and/or proper source material.

3.6.6. **Areas 25 - 29. Reserved for future use.**

Chapter 4

PILOT EVALUATIONS

4.1. General. All pilots require a QUAL and INSTM evaluation; these two evaluations are normally combined and can be completed in either the aircraft, an ATD or a combination of the two. MSN qualified pilots require a separate MSN evaluation. Evaluation standards will be administered in accordance with the individual's crew position as listed below:

4.1.1. Basic Aircraft Qualified (BAQ) pilot (FP), Mission Pilot (MP):

4.1.1.1. FPs and MPs are evaluated to the standards outlined in **Table 2.1** and **Table 4.1-4.3**

4.1.1.2. MPs certified as aircraft commanders will be evaluated as aircraft commanders and formation lead. This implies they have command of the aircraft, crew, and formation.

4.1.2. Evaluator Pilots (EP): EPs may be evaluated IAW **Table 4.1** and AFI 11-202V2.

4.2. Requirements. Refer to Chapter 2 for general and Chapter 3 for instructor grading areas and criteria. Pilot required areas and criteria follow in this chapter.

4.2.1. **Qualification (QUAL):**

4.2.1.1. See **Table 4.1** and **Table 4.3** for required QUAL evaluation areas. Requisites (prerequisites for initial/re-qualification evaluations) include qualification open and closed book examinations (or formal school end of course examinations), EPE (requisite), and boldface examination. This evaluation can be accomplished in combination with the INSTM evaluation IAW **paragraph 1.10**

4.2.1.1.1. Initial QUAL evaluations will be accomplished in the aircraft. Requalification evaluations should be conducted in the aircraft.

4.2.1.2. The evaluation profile will include: visual flight rules (VFR) pattern; roll-on landing, normal and steep approach, airland, approach to hover and hovering maneuvers; engine-out go-around (simulated in aircraft), and simulated engine-out landing (simulated in aircraft).

4.2.2. **Instrument (INSTM):**

4.2.2.1. See **Tables 4.1** and **4.3** for required INSTM evaluation areas. The evaluation profile will include: One precision; two non-precision approaches; holding or procedure turn, and a missed approach. Both INIT and recurring INSTM evaluations may be accomplished in either the aircraft or an ATD.

4.2.2.2. The instrument written examination is a requisite (prerequisite for initial and requalification evaluations).

4.2.2.3. The instrument and qualification flight evaluations may be combined. ***NOTE:*** The MV-22 is considered a different MDS, therefore, all pilots require a CV-22 QUAL/INSTM evaluation. NATOPS evaluation forms will be maintained in the pilot's FEF.

4.2.3. **Mission:**

4.2.3.1. See **Tables 4.2** and **4.3** for MSN evaluation areas and subparagraphs below for requirements. Requisites (prerequisites for initial/re-qualification evaluations) include Mission Open and Closed Book examinations (or formal school end of course examinations) and EPE.

4.2.3.2. Evaluations will be accomplished at night.

4.2.3.3. For all mission evaluations, flight examiners will ensure evaluation profiles include demonstration of an adequate number of events to thoroughly measure knowledge of specific employment procedures to include tactical defensive measures. One form of low level will be accomplished every other year.

4.2.4. **Special Mission Event (SME):**

4.2.4.1. SMEs are listed in AFI 11-2CV-22V1, *CV-22 Aircrew Training*.

4.2.4.2. See **Table 4.2** for SME evaluations.

4.2.4.3. Initial SME evaluations may be conducted separately or in conjunction with a mission evaluation.

4.2.4.4. If a pilot is SME current and qualified and the SME is accomplished during the evaluation profile, the SME is evaluated during the MSN evaluation but annotated separately on the AF IMT Form 8/8a.

4.2.4.5. There are no requisites for SME evaluations.

4.2.4.6. Annotate the specifics of SME evaluations in the "Comments" section of the AF IMT 8/8a.

Table 4.1. Pilot INSTM/QUAL Grading Areas.

Area	Notes	Grading Areas	QUAL	INSTM
30	1	Ground Operations/Taxi	X	
31	1,5	Takeoff 60 or 75 STO or Hover	X	
32	1	Instrument Departure		X
33	1	En route Navigation/Use of NAVAIDs		X
34	1	Descent/Arrival Procedures		X
35	1	Holding/Procedure Turn		X
36	1,2,3	Precision Approach (PAR or Instrument Landing System (ILS))		
36a	1	PAR		X
36b	1	ILS		X
37	2,4	Non-Precision Approach (TACAN, VOR, LOC, Airport Surveillance Radar (ASR))		
37a	1	Tactical Air Navigation (TACAN)		X
37b	1	VOR		X
37c	1	LOC		X

Area	Notes	Grading Areas	QUAL	INSTM
37d	1	ASR		X
38	1	Circling/Side-Step Approach		X
39	1	Engine-Out Approach		X
40	1	Missed Approach/Go-Around		X
41	1	Engine-Out Go-Around	X	
42	1	VFR Pattern	X	
43	1	Final Approach and Landing	X	
43a	1	Roll on Landing	X	
43b	1	Airland	X	
43c	1	Normal Approach	X	
43d	1	Steep Approach	X	
43e	1	Hovering Maneuvers	X	
43f	1	Single Engine Landing	X	
44		Systems Operations/Knowledge/Limitations/NAS	X	X
45-49		Reserved for future use		

Notes:
1. Required in-flight or simulator.
2. Only one of the three required approaches may be controller directed (PAR/ASR).
3. Any one required.
4. Any two required.
5. One STO is required.

Table 4.2. Pilot MSN and SME Grading Areas.

Area	Notes	Grading Areas	MSN	SME
50	1	Low Level Operations/Navigation		
50a	2	Low Level – Terrain Following (TF)	X	
50b	2	Low Level – Night Vision Goggle (NVG)	X	
51	2	Threat Avoidance/Tactics/Countermeasures	X	
52	3	Formation	X	
53	1	NVG Tactical Approach and Landing	X	
54	2	Air Refueling	X	
55	1, 4	Low Visibility Approach (LVA)	X	
56	1	Time On Target	X	
57	1	Alternate Insertion/Extraction/Airland	X	
58	3	Hot Refueling/Forward Arming and Refueling Point (FARP)	X	
59	3	Systems Operations/Knowledge/Limitations	X	
60	3	Authentication/Encode-Decode Procedures	X	
61	1	Night Water Operations		X
62	3	Procedures (Norm/Emerg)	X	

Area	Notes	Grading Areas	MSN	SME
63-99		Reserved for future use		

Notes:
1. Required in-flight. (Every other evaluation for item 50).
2. Required in-flight or simulator certified for this event.
3. Required in-flight or alternate method.
4. May be sampled via water operations, actual brown-out/white-out conditions, or unaided (NVGs up, Forward Looking Infrared (FLIR) off) approach to a blacked-out runway. Unaided approach to a blacked-out runway will not be accomplished on consecutive evaluations.

Table 4.3. General Criteria.

Q	Altitude	+/- 200 feet
	Airspeed	+/- 10 knots
	Course	+/- 5 degrees/3 NM (whichever is greater)
	Arc	+/- 2 NM
Q-	Altitude	+/- 300 feet
	Airspeed	+/- 15 knots
	Course	+/- 10 degrees/5 NM (whichever is greater)
	Arc	+/- 3 NM
U		Exceeded Q- limits

4.3. Grading Criteria. The following subparagraphs contain grading criteria for the areas listed in **Tables** 4.1 and Table 4.2 The general criteria in Table 4.3 apply during all phases of flight except as noted for specific events and instrument final approaches.

4.3.1. **Area 30. Ground Operations/Taxi.**

4.3.1.1. Q. Established and adhered to engine start, taxi, and take-off time to assure thorough preflight, check of personal equipment, crew/passenger briefings, etc. Accurately determined readiness of aircraft for flight. Completed all systems preflight/post flight inspections, and checklists IAW flight manual. Conducted taxi operations according to flight manual, AFI 11-218, *Aircraft Operations and Movement on the Ground*, and local procedures.

4.3.1.2. Q-. Same as above except for minor procedural deviations that did not detract from mission effectiveness.

4.3.1.3. U. Failed to accurately determine readiness of aircraft for flight. Major deviations in procedure that would preclude safe mission accomplishment. Errors directly contributed to a late takeoff that degraded the mission or made it ineffective. Omitted checklist items.

4.3.2. **Area 31. Takeoff.**

4.3.2.1. Q. Maintained smooth, positive aircraft control throughout takeoff. Performed takeoff in accordance with flight manual and as published/directed.

4.3.2.2. Q-. Minor deviations from published procedures without affecting safety of flight. Aircraft control was safe but not consistently smooth and positive. Hesitant in application of procedures or corrections.

4.3.2.3. U. Takeoff was potentially dangerous. Exceeded aircraft/systems limitations. Failed to establish proper climb attitude. Excessive deviation from intended flight path. Violated flight manual procedures. Exceeded Q- criteria.

4.3.3. **Area 32. Instrument Departure.**

4.3.3.1. Q. Performed departure IAW published procedures and directives. Complied with all restrictions or controlling agency instructions. Made all required reports. Applied course/heading corrections promptly. Demonstrated smooth, positive aircraft control.

4.3.3.2. Q-. Minor deviations in navigation occurred during departure. Slow to comply with controlling agency instructions or unsure of reporting requirements. Slow to apply course/heading corrections. Aircraft control was not consistently smooth and positive.

4.3.3.3. U. Instrument departure was not in accordance with technical orders, directives, or published procedures. Failed to comply with published/directed departure, or controlling agency instructions. Accepted an inaccurate clearance. Aircraft control was erratic.

4.3.4. **Area 33. En Route Navigation/Use of NAVAIDs.**

4.3.4.1. Q. Able to navigate using all available means. Used appropriate navigation procedures. Ensured navaids were properly tuned, identified, and monitored. Complied with clearance instructions. Aware of position at all times. Remained within the confines of assigned airspace.

4.3.4.2. Q-. Minor errors in procedures/use of navigation equipment. Some deviations in tuning, identifying, and monitoring navaids were observed. Slow to comply with clearance instructions. Had some difficulty in establishing exact position and course. Slow to adjust for deviations in time and course.

4.3.4.3. U. Major errors in procedures/use of navigation equipment. Did not ensure navaids were tuned, identified and monitored. Could not establish position. Failed to recognize checkpoints or adjust for deviations in time and course. Did not remain within the confines of assigned airspace. Exceeded Q- criteria.

4.3.5. **Area 34. Descent/Arrival Procedures.**

4.3.5.1. Q. Performed descent as directed. Complied with all flight manual, controller issued, or STAR restrictions in a proficient manner. Accomplished all required checks.

4.3.5.2. Q-. Performed descent as directed with minor deviations that did not compromise mission safety. Slow to comply with controller instructions and accomplish required checks.

4.3.5.3. U. Performed descent with major deviations. Failed to follow controller instructions or made erratic corrections. Exceeded flight manual limitations or did not accomplish required checks.

4.3.6. **Area 35. Holding/Procedure Turn.**

4.3.6.1. Q. Performed entry and holding in accordance with published procedures and directives. Holding pattern limits exceeded by not more than:

4.3.6.1.1. Very High Frequency Omni Directional Range Station (VOR) Leg timing: +/- 15 seconds

4.3.6.1.2. TACAN: +/- 2 NM

4.3.6.2. Q-. Performed entry and holding procedures with minor deviations. Holding pattern limit exceeded by not more than:

4.3.6.2.1. VOR Leg timing: +/- 30 seconds.

4.3.6.2.2. TACAN: +/- 3 NM.

4.3.6.3. U. Holding was not in accordance with technical orders, directives, or published procedures. Exceeded Q- holding pattern limits.

4.3.7. **Area 36. Precision Approach (PAR or ILS).** ***NOTE:*** Use the following criteria as general tolerances for airspeed, altitude, heading, glide slope, and azimuth. Airspeed tolerances are based on computed approach speed.

4.3.7.1. Q.

4.3.7.1.1. Heading: +/- 5 degrees of controller's instructions (PAR)

4.3.7.1.2. Glide slope: Within one dot (ILS)

4.3.7.1.3. Azimuth: Within one dot (ILS)

4.3.7.2. Q-.

4.3.7.2.1. Heading: +/- 10 degrees of controller's instructions (PAR)

4.3.7.2.2. Glide slope: Within one dot low, two dots high (ILS), after runway was in sight examinee momentarily deviated below glide path but corrected for a safe landing ("duck under").

4.3.7.2.3. Azimuth: Within two dots (ILS)

4.3.7.3. U.

4.3.7.3.1. Exceeded Q- criteria.

4.3.7.4. **Subarea 36a. Precision Approach Radar.**

4.3.7.4.1. Q. Approach was IAW flight manual, directives and published procedures. Smooth and timely response to controller's instructions. Established initial glide path and maintained glide slope with minor deviations. Complied with decision height. Position would have permitted a safe landing. Elevation did not exceed slightly above or slightly below glide path.

4.3.7.4.2. Q-. Performed approach with minor deviations. Slow to respond to controller's instructions and make corrections. Position would have permitted a safe landing. Elevation did not exceed well above or well below glide path.

4.3.7.4.3. U. Approach not IAW flight manual, directives or published procedures. Erratic course and glide slope corrections. Did not make corrections or react to controller's instructions. Did not comply with decision height and/or position would not have permitted a safe landing. Exceeded Q- limits.

4.3.7.5. **Subarea 36b. Instrument Landing System.**

4.3.7.5.1. Q. Approach was IAW flight manual, directives, and published procedures. Smooth and timely corrections to azimuth and glide slope. Complied with decision height and position permitted a safe landing.

4.3.7.5.2. Q-. Performed procedures with minor deviations. Slow to make corrections or initiate procedures. Slow to comply with decision height. Position would have permitted a safe landing.

4.3.7.5.3. U. Approach not IAW flight manual, directives, or published procedures. Erratic course/glide slope corrections. Did not comply with decision height or position would not have permitted a safe landing. Exceeded Q- criteria.

4.3.8. **Area 37. Non-Precision Approach (TACAN, VOR, LOC, ASR).** ***NOTE:*** Use the following criteria for Areas 37a-37d.

4.3.8.1. Q. Approach was IAW flight manual, directives, and published procedures. Used appropriate descent rate to arrive at Minimum Decision Altitude (MDA) at or before Visual Descent Point (VDP) (if applicable). Position permitted a safe landing. Smooth and timely response to controller's instructions (ASR).

4.3.8.1.1. Heading: +/- 5 degrees (ASR).

4.3.8.1.2. Course: +/- 5 degrees at Missed Approach Point (MAP) (TACAN, VOR), less than one dot deflection (LOC).

4.3.8.1.3. MDA: +100/-0 feet.

4.3.8.1.4. MAP: Timing computed/adjusted within 10 seconds or distance within +/- .5 NM.

4.3.8.2. Q-. Performed approach with minor deviations. Arrived at MDA at or before the MAP, but past the VDP (if applicable). Position would have permitted a safe landing. Slow to respond to controller's instructions and make corrections (ASR).

4.3.8.2.1. Heading: +/- 10 degrees (ASR).

4.3.8.2.2. Course: +/- 10 degrees at MAP (TACAN, VOR).

4.3.8.2.3. Localizer: Within two dots deflection.

4.3.8.2.4. MDA: +150/-50 feet.

4.3.8.2.5. MAP: Timing computed/adjusted within 20 seconds or distance within + 1 / - .5 NM.

4.3.8.3. U. Approach not IAW flight manual, directives, or published procedures. Maintained steady-state flight below the MDA, and exceeded the -50 foot limit. Could not land safely from approach and did not initiate missed approach/go-around when appropriate or directed. Exceeded Q- criteria.

4.3.9. **Area 38. Circling/Side-Step Approach.**

4.3.9.1. Q. Remained within the lateral limits of circling category. Complied with controller's instructions. Attained runway alignment without excessive bank angles. Did not descend from the MDA until in a position to place the aircraft on a normal glide path or execute a normal landing.

4.3.9.1.1. Altitude: +100/-0 feet.

4.3.9.2. Q-. Slow to comply with controller's instructions. Attained runway alignment but occasionally required excessive bank angles or maneuvering.

4.3.9.2.1. Altitude: +150/-50 feet.

4.3.9.3. U. Exceeded the lateral limits of circling airspace. Did not comply with controller's instructions. Excessive maneuvering to attain runway alignment was potentially unsafe. Descended from the MDA before the aircraft was in position for a normal glide path or landing. Exceeded Q- criteria.

4.3.10. **Area 39. Engine-Out Approach.** ***NOTE:*** Use approach criteria for the type of approach being flown and the following.

4.3.10.1. Q. Performed procedures IAW the flight manual and associated directives. Individual technique complied with established procedures.

4.3.10.2. Q-. Unnecessary maneuvering due to minor errors in planning or judgment.

4.3.10.3. U. Major/unsafe deviations from procedures. Individual technique unsafe or violated established procedures. Potentially unsafe maneuvering.

4.3.11. **Area 40. Missed Approach/Go-Around.**

4.3.11.1. Q. Executed missed approach IAW published procedures and restrictions. Initiated and performed go-around promptly. Complied with controller's instructions. Applied smooth control inputs. Attained and maintained a positive climb.

4.3.11.2. Q-. Executed missed approach with minor deviations to published procedures/ directives. Was slow or hesitant to initiate go-around. Slow to respond to controller's instructions. Slightly over-controlled the aircraft. Allowed aircraft to descend during transition.

4.3.11.3. U. Did not execute missed approach IAW technical orders, directives or published procedures. Did not comply with controller's instructions. Deviations or misapplication of procedures could have led to an unsafe condition including excessive descent during transition. Exceeded Q- criteria.

4.3.12. **Area 41. Engine-Out Go-Around.** ***NOTE:*** Use Area 40 criteria and the following.

4.3.12.1. Q. Applied smooth control inputs.

4.3.12.2. Q-. Individual techniques were safe, but detracted from the maneuver.

4.3.12.3. U. Individual technique unsafe or violated established procedures.

4.3.13. **Area 42. VFR Pattern.**

4.3.13.1. Q. Adhered to published restrictions/local guidance. Performed traffic pattern and turn to final/final approach IAW flight manual procedures. Aircraft control was smooth and positive. Very slight over/under-shoot of final approach. Constantly cleared area of intended flight.

4.3.13.2. Q-. Minor deviations from published restrictions/local guidance. Performed traffic pattern and turn to final/final approach with minor deviations to procedures. Aircraft control was safe but not consistently smooth and positive. Over/under-shot final approach but was able to intercept a normal glide path. Adequately cleared area of intended flight.

4.3.13.3. U. Major/unsafe deviations from published restrictions/local guidance. Did not perform traffic pattern and turn to final/final approach IAW technical orders, directives or published procedures. Displayed erratic aircraft control. Over/under-shot final approach by a wide margin requiring a go-around or potentially unsafe maneuvering on final. Did not clear area of intended flight. Exceeded Q- criteria.

4.3.14. **Area 43. Final Approach and Landing.**

4.3.14.1. **Areas 43a through 43f.** Use the following criteria. **Note:** For instrument approaches, the examinee should utilize a normal glide slope from either the decision height or from a point where visual acquisition of the runway environment/intended point of landing is made.

4.3.14.2. Q. Performed the approaches and landings IAW the procedures and limitations outlined in the flight manual and published directives. Aircraft control was smooth and positive. Started the final descent on the desired approach angle. Demonstrated satisfactory control to maintain/correct to the desired rate of descent and approach angle. Touchdown/termination was within the desired area.

4.3.14.3. Q-. Same as Q except for minor deviations to procedures and limitations outlined in the flight manual and published directives.

4.3.14.4. U. Major deviations to the procedures and limitations outlined in the flight manual and published directives. Aircraft control was erratic/unsafe. Consistently overshot/undershot final. Failed to recognize/maintain the correct or desired rate of descent and approach angle. Failed to touchdown or terminate within the desired/briefed area. Exceeded the limits of flight manual.

4.3.15. **Area 44. Systems Operation/Knowledge/Limitations/National Airspace System (NAS).**

4.3.15.1. Q. Demonstrated/explained a complete knowledge of aircraft systems operations/ limitations and proper procedural use of systems. Demonstrated adequate knowledge of and complied with NAS rules and procedures in all areas of mission planning and flight operations.

4.3.15.2. Q-. Marginal knowledge of aircraft systems operations and limitations in some areas. Used individual technique instead of established procedures and was unaware of differences. Marginal knowledge of NAS rules and procedures.

4.3.15.3. U. Unsatisfactory systems knowledge. Failed to demonstrate/explain the procedures for aircraft system operations. Unsatisfactory knowledge of NAS rules and procedures.

4.3.16. **Areas 45 - 49. Reserved for future use.**

4.3.17. **Area 50. Low Level Operations/Navigation.**

4.3.17.1. **Area 50a. Low Level – TF.**

4.3.17.2. Q. Planned and flew a route to minimize risk to aircraft and crew for a given mission using terrain following procedures IAW flight manual, governing directives and appropriate Tactics, Techniques, and Procedures (TTP). Maintained altitude profile with minor deviations. Planned low altitude warnings prefaced with announcement to crew. Timely and appropriate response to unplanned low altitude warnings or obstacle warnings. Maintained situational awareness as to route location, distance from planned route of flight, minimum safe altitudes (MSAs), while effectively navigating aircraft to objective. Navigated properly to target.

4.3.17.3. Q-. Planned and flew a route to minimize risk to aircraft and crew for a given mission with minor deviations from terrain following procedures IAW flight manual, governing directives and appropriate TTP. Maintained altitude profile with multiple unannounced deviations. Planned low altitude warnings usually prefaced with announcement to crew. Somewhat timely and appropriate response to unplanned low altitude warnings or obstacle warnings. Momentary losses in situational awareness as to route location, poor navigation, distance from planned route of flight, minimum safe altitudes (MSAs), while effectively navigating aircraft to objective.

4.3.17.4. U. Excessive amount and/or excessive low altitude warnings. Major/unsafe deviations from established directives and appropriate TTP. Failed to maintain situational awareness as to route location, distance from planned route of flight, minimum safe altitudes (MSAs) an overall navigational situation. Failed to navigate properly to target.

4.3.18. **Area 50b. Low Level – NVG.**

4.3.18.1. Q. Could satisfactorily determine position using navigation systems and maps. Recognized all check/turn points. Remained within 1 NM of planned course unless deviating for obstacles/threats, and stayed within range/area boundaries. Effectively used terrain masking to degrade/avoid threats. Demonstrated the capability to quickly adjust for deviations in timing and course.

4.3.18.2. Q-. Slow to determine the position using navigation systems or map. Slow to recognize check/turn points. Remained within 2 NM of planned course unless deviating for obstacles/threats, and stayed within range/area boundaries. Satisfactorily used terrain masking to degrade/avoid threats. Slow to recognize and adjust for deviations in timing and course corrections.

4.3.18.3. U. Could not establish position. Failed to recognize check/turn points or adjust for deviations in timing and course. Exceeded the parameters for Q-. Flew outside the established range/area boundaries. Failed to use terrain masking.

4.3.19. **Area 51. Threat Avoidance/Tactics/Countermeasures.**

4.3.19.1. Q. Used proper terrain masking to limit aircraft susceptibility or highlighting to threats. Threat reactions were timely and correct. Accomplished appropriate countermeasures and performed maneuvers to counter the threat. Thoroughly familiar with threat indications visually and on defensive countermeasure equipment.

4.3.19.2. Q-. Limited use of terrain masking. Threat reactions were slow or inconsistent. Slow to accomplish appropriate countermeasures or perform maneuvers to counter threat. Limited knowledge of threat indications visually and on defensive countermeasure equipment.

4.3.19.3. U. Failed to use terrain masking or take the appropriate evasive action and/or activate the appropriate countermeasures. Exceeded the aircraft limitations during evasive maneuvering. Improper threat call and/or clearing/scanning procedures. Flew back through the threat area after completion of the evasive maneuver.

4.3.20. **Area 52. Formation.**

4.3.20.1. Q. Established appropriate formations. Effectively directed the flight to accomplish mission objectives. Good situational awareness and wingman consideration. Positive control of the flight/element. Smooth on the controls. Planned ahead and made timely decisions. Complied with established procedures. Maintained position with only momentary deviations. Made smooth and immediate position corrections. Maintained safe separation and complied with established procedures. Smooth, timely join-up. Good situational awareness.

4.3.20.2. Q-. Adequate flight management. Fair situational awareness and wingman consideration. Control inputs were not unsafe, but made it difficult for wingman to maintain position. Did not always plan ahead and/or hesitant in making decisions. Minor deviations in established procedures. Varied position, but within limits. Minor over-controlling. Minor procedural deviations. Slow join-up. Fair situational awareness.

4.3.20.3. U. Did not establish the appropriate formations. Poor situational awareness and wingman consideration. Rough on the controls. Major deviations in established procedures. Indecisive. Unable to maintain a formation position. Abrupt position corrections. Significant over-controlling requiring assistance from other pilot. Did not maintain safe separation. Unsafe join-up or formation procedures. Poor situational awareness.

4.3.21. **Area 53. NVG Tactical Approach and Landing.**

4.3.21.1. Q. Properly briefed the crew about approach intentions. Maintained controlled, stable approach without excessive deviations. Able to perform an NVG landing or Alternate Insertion/Extraction (AIE) to the desired zone +/- .05 NM. Able to apply techniques and procedures from AFSOCH 11-222/AFTTP3-3V10 *CV-22 Combat Aircraft Fundamentals* and adjust parameters based on external factors such as terrain and wind.

4.3.21.2. Q-. Briefed the crew about approach intentions with minor omissions. Maintained controlled, stable approach with minor deviations. Able to perform an NVG landing or AIE to the desired zone +/- .07NM. Able to apply techniques and procedures

from AFSOCH 11-222/AFTTP3-3V10, but had difficulty adjusting parameters based on external factors such as terrain and wind.

4.3.21.3. U. Exceeded standards for Q-.

4.3.22. **Area 54. Air Refueling.**

4.3.22.1. Q. Performance IAW the procedures outlined in the flight manual and other published directives. Aircraft control was smooth and positive during the rendezvous/join-up/contact/disconnect/crossover. Contacts were accomplished in a timely fashion, with controlled misses (if applicable). When not flying, closely monitored fuel management, aircraft systems/instruments and lighting. Assisted the pilot flying as briefed/required.

4.3.22.2. Q-. Same as Q except for minor deviations which did not affect safety/mission accomplishment.

4.3.22.3. U. Major deviations to the procedures outlined in the flight manual and other published directives. Aircraft control was erratic/unsafe. Unable to perform contacts and/or misses were dangerous. When not flying, failed to monitor fuel management, aircraft systems/instruments and/or aircraft flight path/position. Did not assist the pilot flying as briefed/required.

4.3.23. **Area 55. Low Visibility Approach**

4.3.23.1. Q. Without outside visual references, performed smooth transition from stabilized final approach altitude and ground speed to pre-briefed location +/- .05 NM and parameters. Ensured a controlled descent rate of no greater than 300 fpm to the ground with minimal drift at touchdown. Maintained stable platform at briefed altitude and ground speed if applicable. Made appropriate corrections to heading and drift. Called for or accomplished the appropriate checklists.

4.3.23.2. Q-. Without outside visual references, performed somewhat rough but effective transition from stabilized final approach altitude and ground speed to pre-briefed location +/- .07NM and parameters. Erratic descent rate to the ground with erratic but controlled drift. Maintained mostly stable platform at briefed altitude and ground speed if applicable. Some delay in appropriate corrections to heading and drift. Called for or accomplished the appropriate checklists.

4.3.23.3. U. Exceeded standards for Q-

4.3.24. **Area 56. Time On Target.**

4.3.24.1. Q. Maneuvered aircraft/formation appropriately based on outside factors in order to arrive at objective on-time +/- 30 seconds.

4.3.24.2. Q-. Maneuvered aircraft/formation with minor deviations in sound tactical flight in order to arrive at objective on-time +/- 30 seconds.

4.3.24.3. U. Failed to appropriately maneuver aircraft/formation. Failed to arrive at objective +/- 30 Seconds.

4.3.25. **Area 57. Alternate Insertion/Extraction.**

4.3.25.1. Q. Properly briefed the crew about AIE intentions. Established and maintained hover +/- 10' over desired location, +/- 10 degrees heading, +/- .05 NM. Acknowledged and responded to crew input for changes to location, altitude. Responded to emergencies appropriately.

4.3.25.2. Q-. Briefed the crew about AIE intentions with minor omissions. Able to maintain hover +/- 15' over desired location, +/- 15 degrees heading, able to perform procedure +/- .07NM. Slow to acknowledge and/or respond to crew input for changes to location, altitude. Slow but safe response to emergencies.

4.3.25.3. U. Exceeded Q- tolerances. Failed to acknowledge and respond to crew input for changes to location, altitude. Failed to respond to emergencies appropriately.

4.3.26. **Area 58. FARP.**

4.3.26.1. Q. Complied w/applicable T.O.s and AFIs. Continuously monitored fuel onload. Responded to system malfunctions and emergencies appropriately.

4.3.26.2. Q-. Slow to comply w/applicable T.O.s and AFIs. Poor monitoring of fuel onload. Slow to respond to system malfunctions and emergencies appropriately.

4.3.26.3. U. Failed to comply with T.O.s and AFIs. Failed to monitor fuel load creating possible breach of safety. Failed to respond to system malfunctions and emergencies appropriately.

4.3.27. **Area 59. Systems Operation/Knowledge/Limitations.**

4.3.27.1. Q. Demonstrated/explained a complete knowledge of aircraft systems operations/limitations and proper procedural use of systems.

4.3.27.2. Q-. Marginal knowledge of aircraft systems operations and limitations in some areas. Used individual technique instead of established procedures and was unaware of differences.

4.3.27.3. U. Unsatisfactory systems knowledge. Failed to demonstrate/explain the procedures for aircraft system operations.

4.3.28. **Area 60. Authentication/Encode-Decode Procedures.**

4.3.28.1. Q. Thorough knowledge of authentication/encode-decode materials and procedures. Correct/timely authentication procedures. Correct/timely encode-decode procedures when required. Correct authentication/encode-decode materials were always readily at hand.

4.3.28.2. Q-. Limited knowledge of authentication/encode-decode materials and procedures which did not affect mission accomplishment. Correct but slow authentication which did not affect mission accomplishment. Correct but slow encode-decode procedures which did not affect mission accomplishment.

4.3.28.3. U. Unsatisfactory knowledge of authentication/encode-decode materials and procedures. Incorrect or excessively slow authentication. Failed to encode-decode when required. Authentication/encode-decode materials were not readily available or were incorrect.

4.3.29. **Area 61. Night Water Operations** (Non-riverine operations should be conducted over the horizon)

4.3.29.1. Q. Performed smooth transition from stabilized final approach altitude and ground speed to prebriefed location within briefed parameters. Ensured a controlled descent rate of no greater than 300 fpm to the briefed Above Water Level (AWL) altitude with minimal drift throughout maneuver. Maintained stable platform at briefed altitude and ground speed no higher than 10 feet AWL and no faster than 10 knots ground speed (KGS). Made appropriate corrections to heading and drift for safe team employment. Called for or accomplished the appropriate checklists.

4.3.29.2. Q-. Performed somewhat rough but effective transition from stabilized final approach altitude and ground speed, minor deviations to prebriefed location and briefed parameters. Erratic descent rate to AWL altitude with erratic but controlled drift. Maintained mostly stable platform minor deviations to briefed altitude and ground speed, maneuver remained safe. Some delay in appropriate corrections to heading and drift. Called for or accomplished the appropriate checklists.

4.3.29.3. U. Exceeded standards for Q-.

4.3.30. Area 62. **Procedures (Norm/Emerg)**

4.3.30.1. Q. Performed/demonstrated/explained both normal and emergency flight and our ground procedures IAW applicable directives.

4.3.30.2. Q-. Marginal performance/demonstration/explanation of flight and our ground procedures or was unaware of procedures or where procedures are located and explained.

4.3.30.3. U. Failed to properly perform/demonstrate/explain appropriate procedures.

4.3.31. **Areas 63 - 99. Reserved for future use.**

Chapter 5

FLIGHT ENGINEER (FE) EVALUATIONS

5.1. General. Mission qualified flight engineers (MF) will accomplish a combined QUAL/MSN evaluation as outlined in **Table 5.1**. Instructors will demonstrate instructor ability on all periodic evaluations as outlined in **Table 3.1**. BAQ only flight engineers (FF) require only a QUAL evaluation.

5.2. Requirements. Evaluate all general areas outlined in **Table 2.1** on all evaluations. Also, evaluate all instructors on instructor areas in **Table 3.1**. FE specific areas and evaluation criteria are listed in **Table 5.1;** areas marked by an X are required to complete the specific evaluation.

5.3. QUAL Evaluations (QUAL). This type of evaluation is for FEs that maintain BAQ status only. See **Table 5.1** for required QUAL evaluation requirements. QUAL evaluations may be accomplished during daylight hours.

5.4. Combined Qualification/Mission Evaluations (QUAL/MSN). QUAL/MSN evaluations will be accomplished at night. For all QUAL/MSN evaluations, flight examiners will ensure evaluation profiles include demonstration of adequate events to thoroughly measure knowledge of specific employment procedures. BAQ flight engineers upgrading to mission flight engineers will complete a full QUAL/MSN evaluation to realign their periodic expiration date as appropriate.

5.4.1. Hoist/Alternate Insertion and Extraction (AIEs).

5.4.1.1. Hoist/AIE requirements. Both initial and periodic evaluations require the performance of at least one type of AIE using actual equipment (i.e. hoist, fast rope). For periodic evaluations, if certified, live AIEs are encouraged, but not required.

5.4.2. Special Mission Event: SMEs are listed in AFI 11-2CV-22V 1. Initial SME evaluations may be conducted separately or in conjunction with a mission evaluation. If a FE is current and qualified and the SME is accomplished during the evaluation profile, the SME is evaluated during the MSN evaluation but annotated separately on the AF Form 8/8a.

5.4.2.1. Ramp Mounted Weapon System. Once trained and evaluated on one gun system during the initial SME evaluation, subsequent certification on any other system does not require an evaluation. Document certification IAW AFI 11-2CV-22 Vol 1.

5.4.2.2. FEs qualified in more than one gun system may be evaluated on either system. Verbally evaluate the system not evaluated by performance. Do not verbally evaluate the same system on subsequent evaluations.

Table 5.1. Flight Engineer QUAL/MSN/SME Grading Areas.

Area	Notes	Grading Areas	QUAL	MSN	SME
200	1	Weight and Balance/Takeoff and Landing (W&B/TOLD)	X		
201	3	Before Exterior/Interior	X		
202	2,3	Before Starting Engines/Starting Engines	X		
203	2	Before Taxi/Taxi	X		

Area	Notes	Grading Areas	QUAL	MSN	SME
204	2	Before Takeoff	X		
205	2	After Takeoff	X		
206	2,3	Climb/Descent			
207	2	Before Landing	X		
208	3	After Landing/Engine Running Rinse	X		
209	2,3	Engine Shutdown	X		
210		Tactical Checklists		X	
211	1	Cabin Configuration/Loading	X		
212	1	Cryptological System Operations		X	
213	3	Low Level Navigation			
214		Formation Procedures		X	
215	3	TF/Terrain Avoidance (TA) Procedures			
216		Degraded Systems			
217		Infil/Exfil Procedures		X	
218	1	Alternate Insertion/Extraction Procedures		X	
219	3	Air Refueling			
220	4	Ramp Mounted Weapon System (or alternate Weapon System)		X	X
221	2	Low Visibility Approach		X	
222	3	Defensive Tactics/Scanning		X	
223	3	Refuel/Defuel/Hot Gas			
224	2	Cockpit Management System	X		
225	1	Engine			
226	1	Proprotor/Drive Systems			
227	3	Fuel/Aerial Refuel Systems			
228	1	Electrical			
229	2	Vehicle Management System	X		
230	1	Landing Gear/Brakes/Steering			
231	2	Fire Detection/Extinguishing			
232		Blade Fold Wing Stow			
233	1	Environmental Control System			
234		Anti-icing/De-icing			
235	1	Aircraft Lighting			
236		Onboard Oxygen Generating System (OBOGS)/ Onboard Inert Gas Generating System (OBIGGS)			
237	1	Auxiliary Power Unit (APU)	X		
238	1	Doors/Hatches/Ramp			
239	2	Radar/FLIR		X	
240	1	Navigation/Communication	X		

Area	Notes	Grading Areas	QUAL	MSN	SME
241	1, A	Hoist		X	
242	3	Aircraft Defensive Systems		X	
243	1	Night Water Hoist			X
244	1	Night Water Operations			X
245 - 249		Reserved for future use			

Notes:
1. Required in-flight.
2. Required in-flight or simulator certified for this event.
3. Required in-flight or alternate method.
4. Alternate between weapon system positions (every other evaluation). Alternate method should be used on weapon system not fired.
A. During initial/periodic evaluations, a demonstration of hoist and fast rope operations is required. Live work is not necessary.

5.5. Grading Criteria. The following subparagraphs contain grading criteria for the areas listed in **Table 5.1**

5.5.1. **Area 200.** Weight and Balance/Take-off and Landing Data (W&B/TOLD).

5.5.1.1. Q. Correctly computed the W&B/TOLD data using applicable performance charts and corrections for existing field conditions. Was fully knowledgeable of W&B/TOLD calculations.

5.5.1.1.1. TOLD criteria:

5.5.1.1.1.1. Required Short Takeoff and Landing (STOL) Airspeeds: +/- 2 knots.

5.5.1.1.1.2. Required STOL Distances: +/- 200 feet.

5.5.1.1.1.3. Hover Mast Torque Required: +/- 2%

5.5.1.1.1.4. Single Engine Service Ceiling Data: +/- 500 feet.

5.5.1.1.2. W&B criteria:

5.5.1.1.2.1. Center of Gravity +/- 0.5 inches

5.5.1.1.2.2. Takeoff or Landing Gross Weights +/- 500 lbs.

5.5.1.2. Q-. Minor errors in the appropriate use of W&B publications and performance charts resulting in data exceeding Q criteria. Had some knowledge of W&B/TOLD calculations. Would not have compromised safety of flight.

5.5.1.2.1. **TOLD criteria:**

5.5.1.2.1.1. Required STOL Airspeeds: +/- 4 knots.

5.5.1.2.1.2. Required STOL Distances: +/- 400 feet.

5.5.1.2.1.3. Hover Mast Torque required: +/- 4%.

5.5.1.2.1.4. Single Engine Service Ceiling Data: +/- 1,000 feet.

5.5.1.2.2. **W&B criteria:**

5.5.1.2.2.1. Center of Gravity: +/- 0.7 inches.

5.5.1.2.2.2. Takeoff or Landing Gross Weights; +/- 1,000.

5.5.1.3. U. Failed to compute W&B/TOLD data. Errors caused W&B/TOLD calculations to exceed Q- criteria. Limited knowledge of W&B/TOLD calculations. Did or could have compromised safety of flight.

5.5.2. **Areas 201 through 210.** Use the following criteria.

5.5.2.1. Q. Accomplished required checklists without errors, omissions, or deviations and with accurate and timely responses. Backed up pilots on flight parameters (i.e., altitudes, airspeeds, and clearances). Recognized and corrected minor omissions or deviations. Recognized, reported, and properly documented out of limit conditions and aircraft malfunctions. Familiar with checklists and contents.

5.5.2.2. Q-. Accomplished required checklists with minor errors, omissions, or deviations and/or was slow to respond. Backed up pilots on flight parameters (i.e., altitudes, airspeeds, and clearances) with some deviations. Slow to recognize and correct minor omissions or deviations. Slow to recognize, report and properly document out of limit conditions and aircraft malfunctions.

5.5.2.3. U. Failed to use the proper checklist or made numerous errors, omissions or deviations. Failed to back up pilots on flight parameters (i.e., altitudes, airspeeds, and clearances). Allowed limitations to be exceeded and failed to recognize and report aircraft malfunctions.

5.5.3. **Area 201. Before Exterior/Exterior/Interior.**

5.5.4. **Area 202. Before Starting Engines/Starting Engines.**

5.5.5. **Area 203. Before Taxi/Taxi.**

5.5.6. **Area 204. Before Takeoff.**

5.5.7. **Area 205. After Takeoff.**

5.5.8. **Area 206. Climb/Descend.**

5.5.9. **Area 207. Before Landing.**

5.5.10. **Area 208. After Landing/Engine Running Rinse.**

5.5.11. **Area 209. Engine Shutdown.**

5.5.12. **Area 210. Tactical Checklists.**

5.5.13. **Area 211. Cabin Configuration/Loading.**

5.5.13.1. Q. Ensured the cabin was properly configured to accommodate mission requirements. Familiar with various configurations as outlined in applicable directives and properly stowed configuration items that were not used. Made sure all cargo items were loaded properly and secured in accordance with the cargo loading manual. Correctly briefed and performed passenger handling duties.

5.5.13.2. Q-. Difficulty configuring the aircraft but did not impede mission. Limited knowledge of various configurations as outlined in applicable directives, and stowed unused items with minor errors. Made sure all cargo items were loaded properly and secured in accordance with the cargo loading manual with minor errors and deviations. Correctly briefed and performed passenger handling duties with minor errors and deviations.

5.5.13.3. U. Failed to ensure proper aircraft configuration or caused mission delays. Had unsatisfactory knowledge of configurations and failed to properly stow configuration items. Incorrectly loaded and secured cargo items. Failed to brief and/or did not perform proper passenger handling procedures.

5.5.14. **Area 212. Cryptological System Operations.**

5.5.14.1. Q. Thorough knowledge of applicable cryptological systems. Full knowledge of keying devices and materials. With use of a guide, keyed all systems without error.

5.5.14.2. Q-. Familiar with applicable cryptological systems, keying devices and materials. With use of guide, keyed most systems with minor error.

5.5.14.3. U. Lacked knowledge of applicable cryptological systems, keying devices or keying materials. Failed to key systems without error.

5.5.15. **Area 213. Low Level Navigation.**

5.5.15.1. Q. Assisted the pilot with navigation through proper use/interpretation of systems. Maintained position awareness, terrain clearance, threat awareness/avoidance, Time Over Targets (TOT), and terminal objective SA by identifying navigational cues. Safely cleared the aircraft as briefed/required.

5.5.15.2. Q-. Assisted the pilot with navigation through proper use/interpretation of systems with minor errors. Maintained position awareness, terrain clearance, threat awareness/avoidance, Time Over Targets (TOT), and terminal objective SA by identifying navigational cues with some deviations. Safely cleared the aircraft as briefed/required.

5.5.15.3. U. Major navigation deviations which affected safe/effective mission accomplishment. Did not use navigational cues to maneuver the aircraft. Did not safely clear the aircraft as briefed/required.

5.5.16. **Area 214. Formation Procedures.**

5.5.16.1. Q. Thorough knowledge of formation procedures IAW T.O.s and AFIs. Provided accurate and timely calls to keep crew informed of wingman's position through use of aircraft systems (e.g., Distance Measuring Equipment, FLIR, RADAR).

5.5.16.2. Q-. Limited knowledge of formation procedures or use of aircraft systems. Mission accomplishment not degraded.

5.5.16.3. U. Lacked ability to use aircraft systems to keep crew informed of wingman's position to a point of mission degradation or safety.

5.5.17. **Area 215. TF/TA Procedures.**

5.5.17.1. Q. Demonstrated knowledge of TF/TA by integrating radar with digital map display and other sensors to execute a successful low-level mission. Acknowledged and managed radar notifications (e.g., warnings and enunciators) and provided accurate calls in a timely manner. Recognized and rectified system failures or altered method of low level using other sensors as appropriate.

5.5.17.2. Q-. Minor errors in TF/TA procedures or employment. Demonstrated limited knowledge of radar capabilities or procedures; slow to recognize system failures and take appropriate action. Used other aircraft sensors with minor errors or deviations. Mission accomplishment not degraded.

5.5.17.3. U. Failed to employ TF/TA radar to ensure mission accomplishment. Misunderstood radar capabilities, failed to acknowledge radar notifications or failed to fully integrate/interpret all sensors while flying the profile.

5.5.18. **Area 216. Degraded Systems.**

5.5.18.1. Q. Demonstrated the ability to correctly identify, troubleshoot, and apply corrective measures to aircraft systems malfunctions. Knowledgeable of operational restrictions or limitations associated with degraded systems.

5.5.18.2. Q-. Minor errors in identifying, troubleshooting, or applying corrective actions to system malfunctions which would not degrade mission accomplishment.

5.5.18.3. U. Failed to correctly identify, troubleshoot, or apply correct measures to systems malfunctions. Mission accomplishment would have been severely impacted.

5.5.19. **Area 217. Infil/Exfil Procedures**

5.5.19.1. Q. Followed/explained proper procedures for infiltration/ex-filtration operations. Thoroughly familiar with proper light signals/communications and emergency procedures.

5.5.19.2. Q-. Difficulty following/explaining proper procedures for infiltration/ex-filtration operations. Limited knowledge of proper light signals/communications and emergency procedures that did not degrade mission effectiveness.

5.5.19.3. U. Did not follow/explain proper procedures for NVG infiltration/ex-filtration operations. Did not use proper light signals/communications and emergency procedures. Failed to use or understand proper light signals/communications and emergency procedures.

5.5.20. **Area 218. Alternate Insertion/Extraction.**

5.5.20.1. Q. Performed hoist and fast rope operations IAW the flight manual and other published directives. Aware of computed power requirements/limitations. Good knowledge of all hoist/fast rope limitations and malfunctions. Provided clear and concise direction during the approach, insertion, pickup and departure. Advised the pilot flying promptly of minor drift tendencies. Actively scanned/cleared the aircraft during the AIE procedures. Equipment malfunctions were dealt with effectively while maintaining situational awareness and crew coordination.

5.5.20.2. Q-. Same as Q except for minor deviations which did not affect safety/mission accomplishment. Slow to advise the pilot flying of drift tendencies and/or slow to scan the area around the aircraft.

5.5.20.3. U. Major deviations to the procedures outlined in the flight manual and other published directives which affected safe/effective mission accomplishment. Unaware of the proper AIE methods or the emergency procedures associated with the method used. Poor knowledge of hoist/fast rope limitations and malfunctions. Failed to advise the pilot flying of drift tendencies and failed to scan the area around the aircraft. Equipment preparation was not accomplished in a timely manner or IAW published directives. Did not correct equipment malfunctions and failed to maintain situational awareness/crew coordination.

5.5.21. **Area 219. Air Refueling.**

5.5.21.1. Q. Was fully knowledgeable of all air refueling operations and procedures. Read correct checklists and performed required checklist items for each phase of flight. Maintained situational awareness and recognized all light signals. Closely monitored fuel management, aircraft systems/instruments and lighting. Assisted the pilot flying as briefed/required.

5.5.21.2. Q-. Was fully knowledgeable of all air refueling operations and procedures with some omissions. Minor deviations while reading checklists and performing checklist items for each phase of flight. Did not recognize/know all light signals and/or closely monitor systems/instruments and lighting. Assistance to crew lacking.

5.5.21.3. U. Limited knowledge of air refueling operations and procedures. Failed to read and perform checklist items for each phase of flight. Failed to recognize/know any light signals. Failed to monitor fuel management, aircraft systems/instruments and lighting. Did not assist the crew as briefed/required.

5.5.22. **Area 220. Ramp Mounted Weapon System.**

5.5.22.1. Q. Demonstrated the ability to arm, de-arm, and safe the weapon in flight. Able to identify and clear weapons malfunctions in a timely manner IAW the appropriate operating manuals. Kept crew advised of other aircraft/teams/targets during employment.

5.5.22.2. Q-. Minor procedure errors and/or was slow to arm/de-arm/safe the weapon. Able to identify and clear weapons malfunctions with minor errors. Slow to advise crew of other aircraft/teams/targets during employment. Safety was never compromised.

5.5.22.3. U. Failed to arm, de-arm, or safe the weapon. Major errors in malfunction procedures. Failed to advise crew of other aircraft/team/survivor/target during employment. Compromised safety of flight.

5.5.23. **Area 221. Low Visibility Approach.**

5.5.23.1. Q. Assisted the pilot with navigation through proper use/interpretation of systems to maintain final approach altitude and ground speed to prebriefed location. Maintained terminal area objective SA by identifying navigational cues as briefed/required.

5.5.23.2. Q-. Slow to assist the pilot with navigation through proper use/interpretation of systems to maintain final approach altitude and ground speed to prebriefed location. Maintained terminal area objective SA by identifying navigational cues as briefed/required with errors. Marginal terminal area SA. Safety or mission accomplishment was not affected.

5.5.23.3. U. Did not assist pilots with navigation or inputs. Failed to maintain terminal area objective SA. Safety and mission accomplishment was compromised.

5.5.24. **Area 222. Defensive Tactics/Scanning.**

5.5.24.1. Q. Threat/countermeasure calls were timely and correct. Performed proper procedures IAW AFTTP. Thorough knowledge of aircraft specific threat avoidance/defense.

5.5.24.2. Q-. Threat/countermeasure calls were slow or inconsistent. Slow to accomplish proper procedures IAW AFTTP. Limited knowledge of aircraft specific threat avoidance/defense.

5.5.24.3. U. Failed to make appropriate threat/countermeasure calls. Failed to employ AFTTP procedures. No knowledge of aircraft specific threat avoidance/defense.

5.5.25. **Area 223. Refuel/Defuel/Hot Gas.**

5.5.25.1. Q. Knowledgeable in all areas of ground refueling. Thoroughly familiar with the proper types of aircraft refueling checklists and completed the required forms. Maintained fuel system limits and adhered to existing published safety precautions.

5.5.25.2. Q-. Limited knowledge of ground refueling. Limited knowledge of aircraft refueling checklists and completion of forms. Errors would not affect safe/effective mission accomplishment.

5.5.25.3. U. Unsatisfactory knowledge/performance of aircraft refueling operations. Unfamiliar with checklists and forms completion. Failed to take all safety precautions.

5.5.26. **Areas 224 through 243.** Use the following criteria.

5.5.26.1. Q. Demonstrated a complete knowledge of aircraft systems and operating limitations both with and without reference to the flight manual and/or available aids.

5.5.26.2. Q-. Limited knowledge of aircraft systems operations and limitations in some areas. Used individual technique instead of procedures and was unaware of differences.

5.5.26.3. U. Unsatisfactory systems knowledge. Failed to demonstrate or explain the procedures for aircraft systems operations with or without reference to the flight manual and/or available aids.

5.5.27. **Area 224. Cockpit Management System.**

5.5.28. **Area 225. Engine.**

5.5.29. **Area 226. Proprotor/Drive Systems.**

5.5.30. **Area 227. Fuel/Aerial Refuel System.**

5.5.31. **Area 228. Electrical.**

5.5.32. **Area 229. Vehicle Management System.**

5.5.33. **Area 230. Landing Gear/Brakes/Steering.**

5.5.34. **Area 231. Fire Detection/Extinguishing.**

5.5.35. **Area 232. Blade Fold Wing Stow.**

5.5.36. **Area 233. Environmental Control System.**

5.5.37. **Area 234. Anti-Icing/De-icing.**

5.5.38. **Area 235. Aircraft Lighting.**

5.5.39. **Area 236. OBOGS/OBIGGS.**

5.5.40. **Area 237. APU.**

5.5.41. **Area 238. Doors/Hatches/Ramp.**

5.5.42. **Area 239. Radar/FLIR.**

5.5.43. **Area 240. Navigation/Communication Systems.**

5.5.44. **Area 241. Hoist.**

5.5.45. **Area 242. Aircraft Defensive Systems.**

5.5.46. **Area 243. Night Water Hoist.**

5.5.46.1. Q. Performed hoist operations IAW the flight manual and other published directives. Aware of computed power requirements/limitations. Good knowledge of all hoist limitations and malfunctions. Provided clear and concise direction during the approach, insertion, pickup and departure. Advised the pilot flying promptly of minor drift tendencies. Actively scanned/cleared the aircraft during the AIE procedures. Equipment malfunctions were dealt with effectively while maintaining situational awareness and crew coordination.

5.5.46.2. Q-. Same as Q except for minor deviations which did not affect safety/mission accomplishment. Slow to advise the pilot flying of drift tendencies and/or slow to scan the area around the aircraft.

5.5.46.3. U. Major deviations to the procedures outlined in the flight manual and other published directives which affected safe/effective mission accomplishment. Unaware of the proper AIE methods or the emergency procedures associated with the method used. Poor knowledge of hoist limitations and malfunctions. Failed to advise the pilot flying of drift tendencies and failed to scan the area around the aircraft. Equipment preparation was not accomplished in a timely manner or IAW published directives. Did not correct equipment malfunctions and failed to maintain situational awareness/crew coordination.

5.5.47. **Area 244. Night Water Operations.**

5.5.47.1. Q. Performed swimmer deployment and CRRC deployment IAW the flight manual and other published directives. Aware of computed power requirements/limitations. Good knowledge on night water operations profile and proper hand signal procedures. Provided clear and concise direction during the approach, insertion, and departure. Advised the pilot flying promptly of course deviations, airspeed

parameters, sink rates, and drift tendencies. Actively scanned/cleared the aircraft during the low and slow approach. Hoist equipment was properly configured in the event of an emergency recovery. Situational awareness was maintained at all times.

5.5.47.2. Q-. Same as Q except for minor deviations which did not affect safety/mission accomplishment. Slow to advise the pilot flying of drift tendencies and/or slow to scan the area around the aircraft.

5.5.47.3. U. Major deviations to the procedures outlined in the flight manual and other published directives which affected safe/effective mission accomplishment. Unaware of the proper night water operations deployment methods or the emergency procedures associated with the method used. Poor knowledge of CRRC tie-down procedures. Failed to advise the pilot flying of course deviations, airspeed parameters, sink rates, and drift tendencies and failed to scan the area around the aircraft. Equipment preparation was not accomplished in a timely manner or IAW published directives. Did not correct equipment malfunctions and failed to maintain situational awareness/crew coordination.

5.5.48. **Areas 245-249 reserved for future use.**

Chapter 6

DIRECT SUPPORT OPERATORS EVALUATIONS

6.1. General. Direct Support Operator (DSO) requires a combined qualification/mission evaluation. Instructors will demonstrate instructor duties on all periodic evaluations.

6.2. Requirements. Refer to Chapter 2 for all evaluations and Chapter 3 for instructor evaluations. DSO specific areas and criteria are listed in this chapter.

6.3. Combined Qualification/Mission (QUAL/MSN) Evaluations. See **Table 6.1** for required evaluation areas.

6.3.1. **Initial/Requalification.** Required events include: A complete equipment preflight; a flight profile that includes a realistic threat scenario; at least one aircraft defensive maneuver during any portion of a tactical mission in which the DSO provides input; and post-flight procedures. Any mission in an actual threat environment will satisfy same requirements.

6.3.2. **Periodic Qualification/Mission.** Requirements for periodic evaluations are the same as initial/requalification evaluations.

Table 6.1. DSO QUAL/MSN Grading Areas.

Area	Notes	Grading Areas
500	1	Control of Classified Material
501	2	Communication Surveillance System (CSS) Operation
502	2	Tactical Data Receiver (TDR) Operation
503	2	GPS Operation
504	1	Threat Knowledge
505	1	Threat Analysis
506	1	Threat Reporting
507	1	Defensive Systems
508	1	Mission Operations
509-549		Reserved for future use

Notes:
1. Required in-flight.
2. Required in-flight or alternate method.

6.4. Grading Criteria. The following subparagraphs contain grading criteria for the areas listed in **Table 6.1**

6.4.1. **Area 500. Control of Classified Material.**

6.4.1.1. Q. Acquired, inventoried, maintained positive control, and/or demonstrated the proper use and storage of classified material, equipment, and information. Satisfactory knowledge of all procedures, including destruction.

6.4.1.2. Q-. Difficulty acquiring, inventorying, maintaining positive control and/or demonstrating the proper use of classified material, equipment, and information. Adequate knowledge of procedures, but needs improvement.

6.4.1.3. U. Failed to acquire, inventory, maintain positive control and/or demonstrate the proper use of classified material, equipment, and information. Unsatisfactory knowledge of procedures.

6.4.2. **Area 501. Communication Surveillance System Operation.**

6.4.2.1. Q. Demonstrated proper execution of frequency spectrum scans, discrete frequency searches and manual operations employing all assets of the CSS as applicable to operator's mission area. Demonstrated ability to use different pieces of CSS equipment in tandem. Satisfactory knowledge of CSS equipment hardware and software operations, installation, and troubleshooting.

6.4.2.2. Q-. Difficulty demonstrating proper execution of frequency spectrum scans, discrete frequency searches and manual operations employing all assets of the CSS as applicable to operator's mission area. Difficulty using different pieces of CSS equipment simultaneously. Adequate knowledge of CSS equipment hardware and software operations, installation, and troubleshooting, but needs improvement.

6.4.2.3. U. Failed to demonstrate proper execution of frequency spectrum scans, discrete frequency searches and manual operations employing all assets of the CSS as applicable to operator's mission area. Failed to use different pieces of CSS equipment in tandem. Unsatisfactory knowledge of CSS equipment hardware and software operations, installation, and troubleshooting.

6.4.3. **Area 502. Tactical Data Receiver Operation.**

6.4.3.1. Q. Demonstrated proper set-up and use of the Tactical Data Receiver as applicable to operator's mission area. Configured TDR and applicable software in satisfactory amount of time. Extracted TDR information pertinent to the mission. Satisfactory knowledge of TDR equipment hardware and software operations, installation, and troubleshooting.

6.4.3.2. Q-. Difficulty demonstrating proper set-up and use of the Tactical Data Receiver as applicable to operator's mission area. Configured TDR and applicable software in satisfactory amount of time, but needs improvement. Extracted TDR information pertinent to the mission but needs improvement. Adequate knowledge of TDR equipment hardware and software operations, installation, and troubleshooting, but needs improvement.

6.4.3.3. U. Failed to set-up and use of the Tactical Data Receiver as applicable to operator's mission area. Failed to configure TDR and/or applicable software within a satisfactory amount of time. Failed to extract TDR information pertinent to the mission. Unsatisfactory knowledge of TDR equipment hardware and software operations, installation, and troubleshooting.

6.4.4. **Area 503. GPS Operation.**

6.4.4.1. Q. Demonstrated proper set-up and use of the Global Positioning System (GPS) in conjunction with navigational software. Demonstrated use of the GPS as an aid to situational awareness. Integrated GPS information into CSS and TDR operations. Satisfactory knowledge of GPS equipment hardware and software operations, installation, and troubleshooting.

6.4.4.2. Q-. Difficulty demonstrating proper set-up and use of the Global Positioning System in conjunction with navigational software. Difficulty demonstrating use of the GPS as an aid to situational awareness. Difficulty integrating GPS information into CSS and TDR operations. Adequate knowledge of GPS equipment hardware and software operations, installation, and troubleshooting, but needs improvement.

6.4.4.3. U. Failed to set-up and use the Global Positioning System in conjunction with navigational software. Failed to use the GPS as an aid to situational awareness. Failed to integrate GPS information into CSS and TDR operations. Unsatisfactory knowledge of GPS equipment hardware and software operations, installation, and troubleshooting.

6.4.5. **Area 504. Threat Knowledge.**

6.4.5.1. Q. Demonstrated knowledge of characteristics, procedures, and capabilities associated with threats to the aircraft as applicable to the operator's mission area. Demonstrated knowledge of SILENT SHIELD equipment capabilities/limitations to threats. Satisfactory overall threat knowledge.

6.4.5.2. Q-. Demonstrated adequate knowledge of characteristics, procedures, and capabilities associated with threats to the aircraft as applicable to the operator's mission area, but needs improvement. Demonstrated only basic knowledge of SILENT SHIELD equipment capabilities/limitations to threats. Adequate overall threat knowledge, but needs improvement.

6.4.5.3. U. Demonstrated insufficient knowledge of characteristics, procedures, and capabilities associated with threats to the aircraft as applicable to the operator's mission area. Demonstrated a lack of knowledge of SILENT SHIELD equipment capabilities/limitations to threats. Unsatisfactory overall threat knowledge.

6.4.6. **Area 505. Threat Analysis.**

6.4.6.1. Q. Demonstrated ability to prioritize equipment resources against threats based on location and level of threat to the aircraft.

6.4.6.2. Q-. Difficulty prioritizing equipment resources against threats based on location and level of threat to the aircraft.

6.4.6.3. U. Failed to prioritize equipment resources against threats based on location and level of threat to the aircraft.

6.4.7. **Area 506. Threat Reporting.**

6.4.7.1. Q. Demonstrated ability to relay appropriate situational awareness or threat-related information affecting the safety of the aircraft or its mission to the appropriate crew member in a timely manner. Threat calls excluded extraneous information and met acceptable standards for clarity and brevity. Demonstrated ability to extract essential elements of information (EEI) and intelligence pertinent to technical reporting.

6.4.7.2. Q-. Demonstrated ability to relay appropriate situational awareness or threat-related information affecting the safety of the aircraft or its mission to the appropriate crew member, but needs improvement in timeliness, clarity, and/or brevity. Threat calls included some extraneous information not pertinent to the aircraft and/or mission, but the

overall mission was not impacted. Difficulty extracting EEI and intelligence pertinent to technical reporting.

6.4.7.3. U. Failed to relay appropriate situational awareness or threat-related information affecting the safety of the aircraft or its mission to the appropriate crew member in a timely manner. Threat calls included extraneous information and fell below acceptable standards for clarity and brevity. Inadequate threat reporting negatively impacted the mission. Failed to extract EEI and intelligence pertinent to technical reporting.

6.4.8. **Area 507. Defensive Systems.**

6.4.8.1. Q. Demonstrated satisfactory knowledge of aircraft defensive systems. Familiar with nomenclature and basic operation and capabilities/limitations of aircraft defensive system components against specific threats. Able to describe impact of equipment outages on mission objectives.

6.4.8.2. Q-. Demonstrated adequate knowledge of defensive systems but needs improvement. Needed assistance with nomenclature and basic operation and capabilities/limitations of aircraft defensive system components against specific threats. Difficulty describing impact of equipment outages on mission objectives.

6.4.8.3. U. Failed to demonstrate adequate knowledge of aircraft defensive systems. Unfamiliar with nomenclature and basic operation and capabilities/limitations of aircraft defensive system components against specific threats. Failed to describe impact of equipment outages on mission objectives.

6.4.9. **Area 508. Mission Operations.**

6.4.9.1. Q. Able to explain support provided to SILENT SHIELD operations and CV-22 tactical operations by support aircraft (e.g., SEAD/DEAD aircraft, RC-135 RIVET JOINT, E-3 AWACS, etc.). Able to explain basic mission employment doctrine of the CV-22 and impact of SILENT SHIELD on CV-22 operations.

6.4.9.2. Q-. Difficulty explaining support provided to SILENT SHIELD operations and MC-130 tactical operations by support aircraft (e.g., SEAD/DEAD aircraft, RC-135 RIVET JOINT, E-3 AWACS, etc.). Able to explain basic mission employment doctrine of the CV-22 and impact of SILENT SHIELD on CV-22 operations, but needed improvement.

6.4.9.3. U. Failed to explain support provided to SILENT SHIELD operations and MC-130 tactical operations by support aircraft (e.g., SEAD/DEAD aircraft, RC-135 RIVET JOINT, E-3 AWACS, etc.). Failed to explain basic mission employment doctrine of the CV-22 and impact of SILENT SHIELD on CV-22 operations.

6.4.10. **Areas 509 - 549. Reserved for future use.**

6.5. Forms Adopted: AFSOC Form 48, *Flight Evaluation Form,* AF IMT 8/8a, *Certificate of Aircrew Qualification,* AF IMT 847, *Recommendation for Change of Publication,* AF IMT 4031, *CRM Skills Criteria Training/ Evaluation,* AFTO Form 781, *ARMS Aircrew/Mission Flight Data Recorder.*

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DCS, Operations, Plans and Requirements

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 11-202V2, *Aircrew Standardization/Evaluation Program,* 13 September 2010

AFI 11-202V3, *General Flight Rules,* 22 October 2010

AFI 11-215, *USAF Flight Manuals Program (FMP),* 22 December 2008

AFI 11-218, *Aircraft Operations and Movement on the Ground,* 11 May 2005

AFI 11-290, *Cockpit/Crew Resource Management Training Program,* 11 April 2001

AFI 11-2CV-22V1, *CV-22 Aircrew Training,* (TBD*)*

AFMAN 33-363, *Management of Records,* 1 March 2008

AFPD 11-2, *Aircraft Rules and Procedures,* 14 January 2005

AFPD 11-4, *Aviation Service,* 01 September 2004

AFSOC CV-22 Operations CONOPS Annex C (AFI 11-2CV-22V 3), *CV-22 Operations Procedures,* 21 February 2008

AFSOCH 11-222 (AFTTP 3-3V 10), *CV-22 Combat Aircraft Fundamentals,* 22 October 2010

Abbreviations & Acronyms

AIRCAT—Automated Integrated Radar Control for Air Traffic

AFI—Air Force Instruction

AFSOC—Air Force Special Operations Command

AFTTP—Air Force Tactics Techniques and Procedures (AFSOCH 11-222 Combat Aircraft Fundamentals CV-22)

AIE—Alternate Insertion/Extraction

APU—Auxiliary Power Unit

ARMS—Aviation Resource Management Systems

ASR—Airport Surveillance Radar

ATD—Aircrew Training Device

AWL—Above Water Level

BAQ—Basic Aircraft Qualified

CONOP— Concept of Operations

COMSEC—Communications Security

CRM—Cockpit/Crew Resource Management

CSS—Communication Surveillance System

DEAD—Destruction of Enemy Air Defenses

DSO—Direct Support Operator

EEI—Essential Elements of Information

EPE—Emergency Procedures Evaluation

EP—Evaluator Pilot or Emergency Procedure

FARP—Forward Arming and Refueling Point

FDP—Flight Director Panel/Flight Duty Period

FE—Flight Engineer

FF—First Flight Engineer

FLIR—Forward Looking Infrared

FP—First Pilot

GPS—Global Positioning System

HQ—Headquarters

IAW—In Accordance With

ILS—Instrument Landing System

INSTM—Instrument

KGS—Knots Ground Speed

LOC—Localizer

LVA—Low Visibility Approach

MAJCOM—Major Command

MAP—Missed Approach Point

MDA—Minimum Decision Altitude

MDS—Mission Design Series

MF—Mission Flight Engineer

MP—Mission Pilot

MSA—Minimum Safe Altitude

MSN—Mission

NAS—National Airspace System

NAVAID—Navigational Aid

NM—Nautical Mile

NVG—Night Vision Goggle

OBIGGS—Onboard Inert Gas Generating System

OBOGS—Onboard Oxygen Generating System

OPR—Office of Primary Responsibility

OPSEC—Operations Security

PAR—Precision Approach Radar

QUAL—Qualification

RQ—Requal

SA—Situational Awareness

SEAD—Suppression of Enemy Air Defenses

SME—Special Mission Event

STAN/EVAL—Standardization/Evaluation

STOL—Short Takeoff and Landing

TA—Terrain Avoidance

TACAN—Tactical Air Navigation

TDR—Tactical Data Receiver

TF—Terrain Following

TF/TA—Terrain Following/Terrain Avoidance

TOLD—Takeoff and Landing Data

TOT—Time Over Target

TTP—Tactics, Techniques, and Procedures

VDP—Visual Descent Point

VFR—Visual Flight Rules

VOR—Very High Frequency Omni Directional Range Station

W&B—Weight and Balance

Terms

Air Refueling—Airborne fuel onload by receiver aircraft.

Deviation—Performing an action not in sequence with current procedures, directives, or regulations. Performing action(s) out of sequence due to unusual or extenuating circumstances is not considered a deviation. In some cases, momentary deviations may be acceptable; however, cumulative momentary deviations will be considered in determining the overall qualification level.

Error—Departure from standard procedures. Performing wrong actions or recording incorrect information.

Low Level Operations—conducted below 3,000 feet AGL.

Minimum Safe Altitude (MSA)—MSA is an intermediate altitude which will provide terrain clearance in VMC or Instrument Meteorological Conditions.

Minor—Did not detract from mission accomplishment, adversely affect use of equipment, or violate safety.