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**AC-130J AIRCREW EVALUATION
CRITERIA**

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This manual implements Air Force Instruction (AFI) 11-200 *Aircrew Training, Standardization/Evaluation, and General Operations Structure*. It establishes evaluation criteria for initial and periodic aircrew qualification for all units operating AC-130J Gunships. Use this publication in conjunction with Air Force Instruction 11-202, Vol 2, *Aircrew Standardization and Evaluation Program*, and corresponding major command (MAJCOM) supplements.

This AFMAN applies to all civilian employees and uniformed members of the Regular Air Force and Air Force Reserve who operate or maintain AC-130J aircraft.

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(AETC) This supplement implements and extends the guidance of Air Force Manual (AFMAN) 11-2AC-130J, Volume 2, *AC-130J Aircrew Evaluation Criteria*. This supplement applies to all Air Education and Training Command (AETC) AC-130J units and personnel operating under the oversight of AETC. With the exception of personnel participating in an associate program, this supplement does not apply to Air Force Reserve or Air National Guard units unless specified by a major command (MAJCOM) memorandum of understanding. This publication does not apply to the United States Space Force. This publication may be supplemented at any level, but all supplements must be routed to AETC Standards and Evaluation (Stan/Eval) (AETC/A3V) for coordination prior to certification and approval. The authorities to waive requirements in this publication are identified with a tier (“T-0, T-1, T-2, T-3”) number following the compliance statement. See Department of the Air Force Manual (DAFMAN) 90-161, *Publishing Processes and Procedures*, for a description of the authorities associated with the tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to Chief AETC/A3V for non-tiered compliance items. Coordinate draft supplements, prospective Department of the Air Force (DAF) Form 847, *Recommendation for Change of Product*, and desired waivers via Enterprise Task Management Software Solution (ETMS2) to AETC Stan/Eval Workflow. This publication requires the collection and or maintenance of information protected by the Privacy Act of 1974 authorized by Department of Defense Instruction (DoDI) 5400.11, *DoD Privacy and Civil Liberties Programs*. The applicable SORN F011 AF XO A, Aviation Resource Management Systems (ARMS), is available at <https://pclt.defense.gov/DIRECTORATES/Privacy-and-Civil-Liberties-Directorate/Privacy/SORNsIndex/Article/4006186/f011-af-xo-a/>. Ensure all records generated as a result of processes prescribed in this publication adhere to Air Force Instruction (AFI) 33-322, *Records Management and Information Governance Program*, and are disposed of in accordance with (IAW) the Air Force Records Disposition Schedule, which is located in the Air Force Records Information Management System.

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Chapter 1

GENERAL INFORMATION

1.1. Objectives. The Aircrew Standardization and Evaluation Program is the commander's tool to validate mission readiness and the effectiveness of unit flying, to include documentation of individual aircrew member qualifications and capabilities.

1.2. General. This instruction establishes requirements and grading criteria for ground and flight phases of initial and periodic flight evaluations. All AC-130J [flown by Special Operations Forces aircrew] evaluations will be conducted in accordance with (IAW) this instruction guidance and AFI 11-202, Vol 2. 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. **(T-2)**

1.2. (AETC) General. Evaluation areas and criteria address evaluation areas and criteria absent in AFMAN 11-2AC-130J, Volume 2. AETC AC-130J flight examiners (FEs) should locally develop AF Form 3862, *Flight Evaluation Worksheet*, for all INIT, RQ, and periodic stand-alone and/or combined evaluations to align with this guidance.

1.3. Applicability. This instruction applies to all individuals performing crew duties on AC-130J aircraft or weapon system trainers (WST).

1.4. Keywords and definitions.

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

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

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

1.4.4. "Note" indicates operations procedures, techniques, and other items considered essential to emphasize.

1.4.5. See [Attachment 1](#), Glossary of References and Supporting Information for additional terms, definitions, and references.

1.5. Waivers. IAW AFI 11-202, Vol 2, the Deputy Chief of Staff, Operations, Director of Training and Readiness (AF/A3T) is the waiver authority for guidance applicable to this instruction (T-1). MAJCOM/A3 is the waiver authority for individual aircrew requirements (e.g. on a case-by-case basis) rather than blanket waivers for a group (T-2). Submit requests for waivers to this instruction through Standards and Evaluation channels to Headquarters Air Force Special Operations Command (HQ AFSOC/A3V). Post all waivers to this instruction in the individual's flight evaluation folder behind Tab 2. See AFI 11-202, Vol 2, AFSOC Sup, for waiver documentation. **(T-2)**

1.5.1. Tier requirements refer to waiver authority based on level of risk. Refer to AFI 33-360 for more information and examples.

1.6. Supplements. Units are encouraged to supplement this instruction with standard evaluation profiles that best fit the unit's mission, equipment, and location. MAJCOMs will forward a copy of MAJCOM supplements to the OPR of this publication, through AFSOC/A3V, for approval.

Units below MAJCOM level will forward one copy of each supplement to their MAJCOM OPR for prepublication review. (T-1)

1.7. Evaluation Procedures. Before the crew briefing, the evaluator will inform the aircraft commander of any special requirements. 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. The flight examiner should not occupy a primary crew position during evaluations to ensure the most comprehensive evaluation. If conditions warrant, however, the flight examiner may occupy a primary crew position during an evaluation.

1.7.1. Flight examiners will ensure all required training and documentation is completed prior to initial (INT) and initial/requalification (RQ) evaluations. (T-2)

1.7.2. Unless requested by examinee and approved by squadron supervision, the examinee will be current for all events evaluated during a periodic evaluation. (T-2)

1.7.3. Flight examiners will not intentionally fail any equipment during flight evaluations, but may deny the use of systems not affecting safety of flight. (T-2)

1.7.4. 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/subarea grades assigned, and any additional training required. (T-2)

1.7.5. **(Added-AETC)** FEs will complete and process AF Forms 8, *Certificate of Aircrew Qualification*, as prescribed here and IAW the AETC supplement to AFMAN 11-202, Volume 2, *Aircrew Standardization and Evaluation Program*. A completed requisite examination (boldface, EPE, open book and closed book tests) that fulfills the requirements for a requisite examination on another evaluation may be annotated on multiple AF Forms 8 as long as that requisite was completed within the approved initial qualification training (IQT) or mission qualification training (MQT) syllabus for INIT or RQ evaluations or the requisite was completed in-phase for overlapping periodic evaluation phases.

1.8. Grading Instructions. All evaluations will follow the guidelines in AFI 11-202, Vol 2, as supplemented, and this volume. Examiners will use the criteria contained in this volume to accomplish all flight, simulator, and emergency procedures evaluations. To ensure standard and objective evaluations, flight examiners will be thoroughly familiar with the prescribed evaluation criteria. (T-2)

1.8.1. Area/Subarea Grades. Areas/subareas will have a two-level (Q/U) or three-level (Q/Q-/U) grading system. Discrepancies will be documented against the listed subareas. (T-2)

1.8.1.1. Q. Q indicates the examinee demonstrated both a satisfactory knowledge of all required information and performed aircrew duties within the prescribed tolerances.

1.8.1.2. Q-. 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 must not exceed the prescribed Q- tolerances, jeopardize flight safety, or be a breach of flight discipline.

1.8.1.3. U. U indicates that performance was outside allowable parameters, compromising flight safety. Deviations from prescribed procedures or tolerances adversely affected mission accomplishment. Evaluated performance may have constituted a breach of flight discipline. An examinee receiving an area/subarea grade of U requires debriefing and/or additional training, as determined by the flight examiner. (T-2)

1.8.2. 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. (T-2)

1.9. Evaluation Requirements. Evaluation profiles will reflect a sampling of the unit’s missions. Evaluation tables in this publication summarize evaluation areas. Areas common to all crewmembers are contained in [Table 2.1.](#) Instructor evaluation areas are in [Table 3.1.](#) Evaluation areas unique to each crew position are located in their respective chapter. Each crew specific chapter defines required events. Events required in-flight only, and/or in simulators (see [Paragraph 1.9.1](#) below), and/or alternate methods (see [Paragraph 1.9.2](#) below) will be identified in the crew specific tables. For any areas without a note, flight examiners may evaluate at their discretion if observed. If required events are not observed, then the evaluation is incomplete and will be accomplished on another flight. If a required event cannot be accomplished, the evaluator will place a restriction on the AF Form 8, *Certificate of Aircrew Qualification*, or AF Form 8A, *Certificate of Aircrew Qualification (Multiple Aircraft)*, as applicable. (T-2)

1.9.1. Simulator. WSTs with a C or greater certification (or Training Value Code of 3 or greater for all areas evaluated as determined by simulator certification) may be used to accomplish evaluations. Simulator certifications will be located at the AFSOC/A3T website. If an area/subarea could not 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 Form 8/8A which portion(s) of evaluation were conducted in the simulator. (T-2)

1.9.2. 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 (procedural trainer, or verbal examination) unless noted in the crew specific chapter. If, in the flight examiner’s judgment, an item cannot be adequately evaluated by an alternate method, complete the evaluation on an additional flight. Document in the comments section of AF Form 8/8A which portions of the evaluation were conducted via an alternate method. (T-2)

1.9.3. Grading Criteria. To the maximum extent possible, flight examiners will use the grading criteria in this volume to determine individual area grades. Exercise judgment when the wording of areas is subjective and when specific areas are not covered. Flight examiner judgment will be the determining factor in arriving at the overall grade. Consider cumulative deviations when determining the overall grade. Base tolerances for in-flight parameters on conditions of smooth air and a stable aircraft. In some cases, momentary deviations are allowable provided the examinee applies prompt corrective action and such deviations do not jeopardize flying safety. (T-2)

1.10. Unsatisfactory Performance. If the flight examiner observes an aircrew counterpart jeopardizing safe flight, the examiner will assume the duties of that aircrew member (provided the

examiner's flight duty period does not exceed AFI 11-202, Vol 3, *General Flight Rules*, maximum flight duty period for an unaugmented 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, a Qualification Level 3 (Q-3) will be assigned as the overall grade. Evaluators must report deviations/discrepancies from established procedures/directives in any area, regardless of the individual's crew specialty, to squadron/group commander for evaluation and necessary action in accordance with AFI 11-202, Vol 2, as supplemented. (T-2)

1.11. Additional Training. Flight examiners are responsible for assigning additional training, at their discretion. The examinee must be informed when the additional training begins and ends. Document additional training and completion IAW AFI 11-202, Vol 2, as supplemented. Any approved training device or medium may be used for additional training. Additional training may be accomplished on the same flight as the evaluation, when unique situations present valuable training opportunities (i.e., crosswind landings) and the discrepancy requiring the additional training will not result in overall Q-3 evaluation. However, this option requires flight examiner discretion and judicious application. (T-2)

1.12. Rechecks. A flight examiner other than the original evaluator should administer the recheck.

1.13. Special Qualifications. Special qualification evaluations are administered for events that are not universal to all members in that crew position. Special qualification evaluations may be conducted separately or in conjunction with qualification/mission (QUAL/MSN) evaluations. There are no requisites for special qualification evaluations unless specified. Refer to the appropriate crew position for any special qualification evaluation requirements. Special qualifications result in an AF Form 8/8A. Special qualification evaluations are spot (SPOT) evaluations IAW AFI 11-202, Vol 2, as supplemented. Further description of the specific event evaluated will be included in the mission description section of the comments block of the AF Form 8/8A. Although a unit may maintain 100 percent of its crewmembers qualified, this documentation is still required due to inter-fly and permanent change of station issues. (T-2)

1.14. Multiple Qualifications. Crew positions, evaluation requirements, and approval authority are IAW AFI 11-202, Vol 2, as supplemented. (T-2)

1.14. (AETC) Multiple Qualifications. The AC-130J Combat Systems Operator (CSO) and Weapons System Operator (WSO) are prescribed in Air Force policy as distinct crew positions and distinct qualifications. Units will document WSO and CSO evaluations on separate AF Form 8s with the appropriate crew position and evaluation type annotated.

1.14.1. **(Added-AETC)** AC-130J CSO and WSO evaluations require two separate AF Forms 8s, however, units may execute the evaluations concurrently (same actual flight for the flight portions of the examinations and a single instance of a requisite completion) or independently (separate flights).

1.14.2. **(Added-AETC)** Multiple evaluation types (e.g. QUAL, MSN) may be combined (same actual flight for the flight portions of the examinations) or examined on separate flights.

1.14.2.1. **(Added-AETC)** Requisites may be combined (e.g. a single CSO-WSO QUAL Open book exam may be completed once with the same date completed appearing on both AF Forms 8 in lieu of two separate QUAL Open book exams).

1.14.2.2. **(Added-AETC)** A single boldface exam and a single EPE may be completed for both the CSO and WSO QUAL evaluations (including for a combined QUAL/MSN evaluation) and that same date will appear in the independent AF Forms 8 for each crew position.

1.14.3. **(Added-AETC)** Each evaluation and AF Form 8 will include the necessary requisites for full documentation of meeting the crew position qualification requirements.

1.14.4. **(Added-AETC)** INIT and RQ candidates will accomplish their QUAL and MSN evaluations, including all requisites, in accordance with the prescribed AETC syllabus, with reference to this supplement for specific AFMAN 11-2AC-130JV2 graded areas on a given flight evaluation.

1.15. AC-130J Block Variants. Evaluators will note which block aircraft an evaluation was conducted in the mission description of the AF Form 8 for all evaluations.

1.16. Roles and Responsibilities.

1.16.1. MAJCOM/A3. AFSOC/A3 is designated lead command for the AC-130J mission design series aircraft and is responsible for establishing and standardizing aircrew evaluations in coordination with user commands.

1.16.2. Group Commander (OG/CC) or equivalent. OG/CCs are responsible for establishing and maintaining the Standardization and Evaluation program and ensure evaluators administer evaluations in accordance with AFI 11-202V2 and this publication.

1.16.3. Squadron Commander (SQ/CC) or designated representative. SQ/CCs are responsible for establishing and maintaining the Squadron Standardization and Evaluation program and ensure evaluators administer evaluations in accordance with AFI 11-202V2 and this publication.

1.16.4. Flight Examiners. Flight Examiners are responsible for administering evaluations in accordance with AFI 11-202V2 and this publication.

Chapter 2

EVALUATION REQUIREMENTS

2.1. General. The general criteria contained in this chapter apply to all crew positions and all evaluations. Use criteria and tables in the appropriate crew position chapters for evaluations. (T-2)

2.1.1. All evaluations will follow guidelines in AFI 11-202, Vol 2, as supplemented, and **Table 2.1** in this volume. This table depicts specific grading areas that apply to all crew position evaluations; **Table 3.1** applies to all instructor evaluations. (T-2)

2.1.2. Administer aircrew evaluations on any flight that as scheduled will accomplish all required items for that evaluation. Mission evaluations should be as realistic as possible with minimum of simulated events. Do not deviate from peacetime restrictions. (T-2)

2.2. Requirements.

2.2.1. Evaluate all crewmembers with guidance in the following subparagraphs, **Table 2.1**, and crew-specific chapters and tables. For instructor evaluations, also see **Table 3.1**. (T-2)

2.2.2. Examinations. All crewmembers will complete open and closed book examinations as a requisite to periodic evaluations. Pilots must complete separate open and closed book examinations as requisites to periodic QUAL and MSN evaluations. All other crewmembers will complete combined periodic QUAL/MSN examinations. Conduct requisite examinations IAW AFI 11-202, Vol 2, as supplemented. (T-2)

2.2.3. Emergency Procedures Evaluation (EPE). An EPE is a requisite for all flight evaluations. EPEs may be conducted verbally, inflight, in a simulator, or by another method determined by the examiner or unit Standardization/Evaluations. Operations Group Standardization/Evaluations may develop EPE guides for each crew position 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. Emphasize emergency procedures and systems knowledge. Examiners should include other general knowledge areas as well. For mission evaluations, evaluate mission-specific equipment and situations. EPEs will include sufficient inflight and ground emergencies to evaluate the examinee's knowledge of systems and procedures to the flight examiner's satisfaction. (T-2)

2.2.3.1. 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. (T-2)

2.2.3.2. The following grading criteria will be used to grade individual items on EPEs for all crew positions. The flight examiner will assign an overall EPE grade (1, 2, or 3) in the Qualification Ground Phase block of the AF Form 8/8A, regardless whether all or a portion of the EPE was performed in-flight. (**Exception:** for Boldface use grading criteria in Area 4). (T-2)

2.3. Cockpit/Crew Resource Management (CRM). In accordance with AFI 11-290, *Cockpit/Crew Resource Management Program*, CRM 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 embedded 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 Form 4031, *CRM Skills Criteria Training/Evaluation Form*. Therefore, the use of the AF Form 4031 is unnecessary for evaluations. **(T-2)**

2.4. Formal Course Evaluations. Fly syllabus evaluations IAW syllabus mission profile guidelines if stated, or on a mission profile, developed from syllabus training objectives. Evaluate all areas identified in this publication for the type of evaluation being flown. Grade training objectives and related areas using the performance criteria in this volume. Formal course guidelines may be modified, based on local operating considerations or examiner judgment, to complete the evaluation. **(T-2)**

2.5. General Grading Criteria.

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

Area	Notes	Area Name
1	1	Safety - CRITICAL
2	1	Aircrew Discipline - CRITICAL
3	1	Airmanship/Situational Awareness - CRITICAL
4	2, 3	Boldface - CRITICAL
5	3	Emergency Procedures Evaluation (EPE)
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, 4	Emergency and Aircrew Flight Equipment (AFE)/Procedures
14	2, 5	Briefings/Debriefings
15	2, 6	Classified Material/Operations Security (OPSEC)
16	2	Anti-Hijacking/Aircraft Security
17	1	Communication

18	2	Risk Management/Decision Making
19	1	Task Management
Notes: 1. Required in-flight or WST certified for this event. 2. Required in-flight, WST certified for this event or alternate method. 3. Only required for QUAL evaluation. 4. Grade if observed. Not required if evaluated as part of the EPE. 5. Required for all crew positions responsible for presenting briefings/debriefings. 6. Required for MSN evaluations only.		

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

Area	Notes	Area Name
1	1	Safety - CRITICAL
2	1	Aircrew Discipline - CRITICAL
3	1	Airmanship/Situational Awareness - CRITICAL
4	2, 3, 7	Boldface - CRITICAL
5	3, 7	Emergency Procedures Evaluation (EPE)
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, 4	Emergency and Aircrew Flight Equipment (AFE)/Procedures
14	2, 5	Briefings/Debriefings
15	2, 6	Classified Material/Operations Security (OPSEC)
16	2	Anti-Hijacking/Aircraft Security
17	1	Communication
18	2	Risk Management/Decision Making
19	1	Task Management

Notes:

1. Required in-flight or WST certified for this event.
2. Required in-flight, WST certified for this event or alternate method.
3. Only required for QUAL evaluation.
4. Grade if observed. Not required if evaluated as part of the EPE.
5. Required for all crew positions responsible for presenting briefings/debriefings.
6. Required for MSN evaluations only.
7. **(Added)** Areas 4 and 5 will be considered requisites and will be documented as such on the AF Form 8 IAW AFMAN 11-202V2. Areas 4 and 5 will be accomplished in the simulator or via alternate method.

2.5.1. Areas 1 through 19: The following subparagraphs contain grading criteria for the areas listed in **Table 2.1.**

2.5.1.1. Area 1. Safety - CRITICAL.

2.5.1.1.1. 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.

2.5.1.1.2. U. Not aware of, and/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.

2.5.1.2. Area 2. Aircrew Discipline - CRITICAL.

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

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

2.5.1.3. Area 3. Airmanship/Situational Awareness - CRITICAL.

2.5.1.3.1. 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 a loss in situational awareness in self or others, and took appropriate action to regain. Demonstrated situational awareness throughout the mission and conducted the flight with a sense of understanding and comprehension.

2.5.1.3.2. U. Decisions or lack thereof resulted in failure to accomplish the assigned mission. Demonstrated poor judgment to the extent that the mission or safety was compromised. Failed to recognize a loss of situational awareness in self or others.

2.5.1.4. Area 4. Boldface - CRITICAL.

2.5.1.4.1. Q. Able to recite/write emergency boldface actions in the correct sequence with no discrepancies.

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

2.5.1.5. Area 5. Emergency Procedures Evaluation (EPE).

2.5.1.5.1. Qualification Level-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.

2.5.1.5.2. Qualification Level-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.

2.5.1.5.3. Qualification Level-3. Unsatisfactory systems/procedural knowledge. Failed to analyze problem or take corrective actions. 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.

2.5.1.6. Area 6. Crew Coordination.

2.5.1.6.1. Q. Effectively coordinated with other crewmembers during all phases of the mission. Provided direction/information when needed.

2.5.1.6.2. Q-. Crew coordination was limited, though adequate to accomplish the mission. Slow to provide direction/information when needed. Coordination was lacking with other crewmembers to the extent minor deviations or omissions caused delays, confusion, and/or negatively impacted crew situational awareness.

2.5.1.6.3. U. Poor crew coordination that negatively affected mission accomplishment or safety of flight. Failed to provide direction/information when needed. Significant breakdown in coordination with other crewmembers. Crew coordination was lacking to the extent the mission accomplishment was significantly degraded.

2.5.1.7. Area 7. Mission Planning.

2.5.1.7.1. Q. Checked all factors applicable to flight such as Flight Information Publications, weather, Notice to Airman System (NOTAMS), alternate airfields, flight logs, performance data, fuel requirements, and charts. When required, extracted necessary information from Air Tasking Order (ATO). Aware of the available alternatives if unable to complete the mission as planned. Read/initialed all items in Flight Crew Information File/Read Files. Prepared at briefing time.

2.5.1.7.2. Q-. Minor errors or omissions detracted from mission effectiveness but did not affect mission accomplishment. Limited knowledge of performance capabilities or approved operating procedures/rules.

2.5.1.7.3. U. Major errors or omissions would have prevented a safe or effective mission. Unsatisfactory knowledge of operating data or procedures. Did not review or initial Go/No-Go items. Not prepared at briefing time.

2.5.1.8. Area 8. Knowledge of Directives.

- 2.5.1.8.1. 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.
- 2.5.1.8.2. Q-. Minor deviations to established procedures. Unsure of some directives and/or had difficulty locating some information in appropriate publications. Any instances of non-compliance did not jeopardize safety.
- 2.5.1.8.3. U. Unaware of established 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.
- 2.5.1.9. Area 9. Preflight.
- 2.5.1.9.1. Q. Completed systems preflight/inspections IAW tech orders, checklists, and instructions. Individual technique complied with established procedures.
- 2.5.1.9.2. Q-. Minor deviations from established systems preflight/inspection. Individual technique was safe, but detracted from established procedures. Used individual technique instead of established procedure and was unaware of differences.
- 2.5.1.9.3. U. Failed to preflight critical component or could not conduct a satisfactory preflight/inspection. Individual techniques unsafe and/or in violation of established procedures.
- 2.5.1.10. Area 10. Use of Checklist.
- 2.5.1.10.1. Q. Consistently used the correct checklist and gave the correct response at the appropriate time throughout the mission.
- 2.5.1.10.2. Q-. Checklist responses were untimely and/or crew member required continual prompting for correct responses.
- 2.5.1.10.3. 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.
- 2.5.1.11. Area 11. Forms/Reports/Logs.
- 2.5.1.11.1. Q. All required forms and/or flight plans were complete, accurate, readable, accomplished on time, and IAW applicable directives. Related an accurate debrief of significant events to applicable agencies (examples include Intel, Weather, Maintenance).
- 2.5.1.11.2. Q-. Minor errors on forms and/or flight plans did not affect conduct of the mission. Inaccurately reported some information due to minor errors, omissions, and/or deviations.
- 2.5.1.11.3. U. Did not accomplish required forms and/or flight plans. Omitted or incorrectly reported significant information due to major errors, omissions, and/or deviations.
- 2.5.1.12. Area 12. Personal/Professional Equipment/Flight Publications.

- 2.5.1.12.1. 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.
- 2.5.1.12.2. 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.
- 2.5.1.12.3. U. Did not have required personal/professional equipment essential for the mission. Unsatisfactory knowledge of the care/use of equipment or the content of required publications. Required equipment inspections were overdue or equipment was unserviceable. Publications were outdated and/or contained deficiencies impacting flight safety or mission accomplishment.
- 2.5.1.13. Area 13. Emergency and Aircrew Flight Equipment (AFE)/Procedures.
- 2.5.1.13.1. Q. Satisfactory systems/procedural knowledge. Displayed satisfactory knowledge of location and use of emergency and AFE. 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.
- 2.5.1.13.2. Q-. Marginal systems/procedural knowledge. Limited knowledge of location and use of emergency and AFE. 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.
- 2.5.1.13.3. U. Unsatisfactory systems/procedural knowledge. Displayed unsatisfactory knowledge of emergency and AFE. Exceeded Technical Order (TO) limitations. Unable or failed to analyze problem or take proper corrective action. Did not use checklist and/or available aids.
- 2.5.1.14. Area 14. Briefings/Debriefings.
- 2.5.1.14.1. Q. Contributed to the briefing content to ensure it included all applicable information. Briefings effectively organized and professionally presented in a logical sequence. Covered all pertinent items. Established objectives for the mission. Presented all training events and special interest items. Effectively used available briefing aids. Concluded briefing to allow crew transport on time. Debriefed mission with appropriate feedback.
- 2.5.1.14.2. Q-. Allowed omission of items pertinent but not critical to the mission. Events out of sequence, hard to follow, some unnecessary repetition. 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. Debrief covered key points but lacked detail, constructive feedback, and/or corrective actions.
- 2.5.1.14.3. U. Failed to conduct/attend required briefings. Failed to use briefing aids. Omitted essential items or did not correct erroneous information that could affect mission success. Demonstrated lack of knowledge of subject. Briefing 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. Debrief was ineffective. Placed blame and/or provided inappropriate corrective actions.

2.5.1.15. Area 15. Classified Material/Operations Security (OPSEC).

2.5.1.15.1. Q. Demonstrated thorough knowledge of Communication Security (COMSEC)/OPSEC 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/COMSEC material or information generated during the mission. Practiced sound COMSEC/OPSEC during all phases of the mission. Identified, requested and obtained all cryptological material required for the mission.

2.5.1.15.2. 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.

2.5.1.15.3. 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.

2.5.1.16. Area 16. Anti-Hijacking/Aircraft Security.

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

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

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

2.5.1.17. Area 17. Communication.

2.5.1.17.1. Q. Communicated in a clear and effective manner. Asked for or gave constructive feedback as necessary. Actively sought other crew member opinions and ideas. Used precise, standard terminology.

2.5.1.17.2. Q-. Unclear communication led to repetition or misunderstanding. Slow to ask for or give constructive feedback. Inconsistent use of precise, standard terminology.

2.5.1.17.3. U. Failed to communicate effectively. Continuously interrupted others, mumbled, and/or conduct/attitude was detrimental to communication among crewmembers. Withheld information and failed to ask for/respond to constructive criticism. Failed to use precise, standard terminology.

2.5.1.18. Area 18. Risk Management/Decision Making.

2.5.1.18.1. Q. Appropriately assessed and mitigated risk in the decision making process. Crew member identified, planned, briefed, and executed alternative mission activity in response to in-flight contingencies in a timely manner after appropriately weighing the risk versus the mission priority.

2.5.1.18.2. Q-. Was slow to or made minor errors in assessing and mitigating risk in the decision making process. Crew member was slow to identify, plan, brief, or execute alternative mission activities in response to contingencies.

2.5.1.18.3. U. Failed to assess and mitigate risk in the decision making process. Failed to make or participate in crew decisions or withheld information that would have corrected an unsafe situation.

2.5.1.19. Area 19. Task Management.

2.5.1.19.1. Q. Recognized and requested assistance when task-saturated. Properly prioritized multiple tasks and effectively used available resources, ensuring smooth mission execution.

2.5.1.19.2. Q-. Poor task prioritization and inefficient use of available resources resulted in less than optimum mission execution. Slow to recognize and request assistance when task-saturated.

2.5.1.19.3. U. Failed to prioritize multiple tasks and did not use available resources.

Chapter 3

INSTRUCTOR EVALUATIONS

3.1. General. The instructor grading criteria apply to initial, requalification, and all recurring instructor evaluations. The examinee must demonstrate the ability to instruct in a safe and effective manner. (T-2)

3.2. Requirements. Evaluate instructors on areas listed in [Table 3.1](#). Instructor candidates must be qualified in all areas they will instruct. Initial instructor evaluations may be stand-alone evaluations or accomplished in conjunction with recurring evaluations. If able, evaluate instructor candidates instructing actual students. A requalification instructor evaluation is required anytime an instructor is unqualified for any reason to include commander-directed downgrades. Complete instructor evaluations in the aircraft if possible. (T-2)

3.2. (AETC) Requirements. Evaluate instructors on areas listed in [Table 3.1](#) during periodic QUAL and MSN evaluations or combined QUAL/MSN evaluations. INIT and RQ INSTR candidates will accomplish their [Table 3.1](#) areas during the prescribed AETC syllabus flow.

3.2.1. (Added-AETC) AETC AC-130J WSO instructors require multiple qualification designation as a CSO IAW AFMAN 11-202V2, and completion and documentation on an AF Form 8 of all periodic CSO and WSO QUAL and MSN requirements to instruct both crew positions.

3.3. Instrument (INSTM).

3.3.1. Initial/Requalification. Evaluate instructor candidates on instructor performance during a representative sample of unit's basic maneuvers. The examiner will act as student during maneuvers that are considered high risk. (T-2) Evaluate instructor pilot candidate's instructional ability during a representative sample of emergency and instrument procedures. (T-2)

3.3.2. Recurring. Qualified instructors will be evaluated to instructor standards during all recurring evaluations. (T-2)

3.4. Qualification (QUAL).

3.4.1. Initial/Requalification. Evaluate instructor candidates on instructor performance during a representative sample of unit's basic maneuvers. The examiner will act as student during maneuvers that are considered high risk. (T-2) Evaluate instructor pilot candidates' instructional ability during a representative sample of emergency and qualification procedures. Also, instructor pilot candidates must demonstrate each type of landing applicable to the aircraft from the instructor position. (T-2)

3.4.2. Recurring. Qualified instructors will be evaluated to instructor standards during all recurring evaluations. (T-2)

3.5. Mission (MSN). Mission evaluations of instructors will be accomplished in the crew member's primary aircraft. Evaluate instructional ability during a representative sample of unit's mission events. (T-2)

3.5.1. Initial/Requalification. Accomplish the initial instructor evaluation on a mission that permits accomplishment of all required instructor areas. (T-2)

3.5.2. Recurring. Qualified instructors will be evaluated to instructor standards during all recurring evaluations. See [Table 3.1.](#), Note 3 for recurring MSN evaluations of Basic Aircraft Qualified (BAQ)-only instructors. (T-2)

Table 3.1. Instructor Grading Areas (All Crew Positions).

Area	Notes	Area Name
20	2	Mission Preparation
21	2	Instructional Ability
22	2	Instructor Knowledge
23	2	Briefings/Debriefings/Critique
24	1, 3	Demonstration of Maneuvers/Procedures
25-29		Reserved for future use
Notes: 1. Required in-flight or WST certified for this event. 2. Required in-flight, WST certified for this event, or alternate method. 3. Not required on MSN evaluations of Instructors certified as “BAQ only.”		

3.6. Instructor Grading Criteria.

3.6.1. Areas 20 through 29: The following sub-paragraphs contain grading criteria for the areas listed in [Table 3.1.](#)

3.6.1.1. Area 20. Mission Preparation.

3.6.1.1.1. Q. Thoroughly reviewed student's training folder. 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.

3.6.1.1.2. 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.

3.6.1.1.3. 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.

3.6.1.2. Area 21. Instructional Ability.

3.6.1.2.1. 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.

3.6.1.2.2. Q-. Problems in communication or analysis degraded effectiveness of instruction. Accomplished the above tasks with minor discrepancies that did not affect safety or adversely affect student progress.

3.6.1.2.3. U. Unable 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.

3.6.1.3. Area 22. Instructor Knowledge.

3.6.1.3.1. 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.

3.6.1.3.2. 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.

3.6.1.3.3. 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.

3.6.1.4. Area 23. Briefings/Debriefings/Critique.

3.6.1.4.1. Q. Briefings were well organized, accurate, and thorough. Reviewed student's present level of training and defined mission events to be performed. Showed an excellent 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.

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

3.6.1.4.3. 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.

3.6.1.5. Area 24. Demonstration of Maneuvers/Procedures.

3.6.1.5.1. 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.

- 3.6.1.5.2. 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.
- 3.6.1.5.3. U. Was unable 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.
- 3.6.1.6. Areas 25 - 29. Reserved for future use.

Chapter 4

PILOT/COPILOT EVALUATIONS

4.1. General. All pilots (Ps) and copilots (CPs) require INSTM and QUAL evaluations. MSN qualified Ps/CPs require a MSN evaluation. CPs will be evaluated to the same area standards as Ps unless specified otherwise. CP crew coordination will not include duties and responsibilities expected of an aircraft commander. Instructors will demonstrate instructor duties on all periodic evaluations. Ps will fly MSN evaluations in their primary mission design series. Recurring INSTM, QUAL, and/or MSN evaluations may be combined. (T-2)

4.1. (AETC) General. Pilot evaluations may be combined or stand-alone and will include boldface (QUAL only), EPE, and additional requisites as required. INIT and RQ candidates will accomplish their INSTM, QUAL, and MSN evaluations, including all requisites, IAW the prescribed AETC syllabus with reference to this supplement for specific AFMAN 11-2AC-130JV2 areas of evaluation on a given flight examination.

4.2. Requirements. Refer to [Chapter 2](#) for all evaluations. Instructors will demonstrate instructor duties on all evaluations; refer to [Chapter 3](#) for instructor evaluation grading areas and criteria. P/CP specific areas are listed in this chapter. (T-2)

4.3. Instrument (INSTM). See [Table 4.1](#) and subparagraph below for required INSTM evaluation areas. Complete requisites per AFI 11-202, Vol 2, as supplemented. Conduct the INSTM evaluation in-flight or in a WST certified to accomplish specified events. The evaluation profile will include: one precision; one non-precision approach; one CAT II actual or simulated approach; holding or procedure turn; circling pattern; missed approach; and simulated engine-out instrument approach. One of the approaches will be flown without the use of auto throttles and autopilot. (T-2)

4.3. (AETC) Instrument (INSTM). INSTM evaluation includes completion of an Instrument Exam as a requisite, evaluation of applicable areas listed in [Table 2.1](#), and all areas marked with an “X” under the INSTM heading in [Table 4.1](#).

4.4. Qualification (QUAL). See [Table 4.1](#) and subparagraph below for required QUAL evaluation areas. Ensure requisites are completed per AFI 11-202, Vol 2, as supplemented. Conduct the QUAL evaluation in-flight or in a WST certified to accomplish specified events. The evaluation profile will include: Visual Flight Rules pattern; 100%, 50%, and 0% flap landing (only aircraft commanders/first pilots/instructors will accomplish 0% flap landings); touch-and-go procedures; simulated engine-out go-around, and simulated engine-out landing. (T-2)

4.4. (AETC) Qualification (QUAL). QUAL evaluation includes completion of AC-130J Pilot QUAL Open book and Pilot QUAL Closed book exams, boldface, and EPE requisites, evaluation of applicable areas listed in [Table 2.1](#), and all areas marked with an “X” under the QUAL heading in [Table 4.1](#).

4.5. Mission (MSN). See [Table 4.2](#) and subparagraphs below for required MSN evaluation areas. Ensure requisites are completed per AFI 11-202, Vol 2, as supplemented. Conduct the MSN evaluation in-flight or in a WST certified to accomplish specified events. (T-2) Note: loss of mission qualification does not affect basic qualification.

4.5. (AETC) Mission (MSN). MSN evaluation includes completion of AC-130J Pilot MSN Open book and Pilot MSN Closed book requisite exams, evaluation of applicable areas listed in [Table 2.1](#), and all areas in [Table 4.2](#).

4.5.1. The evaluation profile will include:

4.5.1.1. At least three distinct tactical engagements/intercepts (only one for periodic examinations);

4.5.1.2. ECM profile (if available);

4.5.1.3. 30mm or 105mm employment (live fire required for Ps), Note: Dry dry fire profiles are adequate for Copilot evaluations;

4.5.1.4. Precision Guided Munitions (PGM) employment (live or dry fire);

4.5.1.5. Tactical recovery/ integrated precision radar approach (IPRA);

4.5.1.6. Current special interest items.

4.5.2. Initial/Requalification Air-to-Air Refueling (AAR) Contact (Not required for recurring evaluations or RQ evaluations administered due to loss of currency). Ps must demonstrate the ability to accomplish a sustained fuel transfer per grading criteria of Area 60. Except for breakaway, evaluate emergency procedures verbally. **(T-2)**

4.5.3. **(Added-AETC)** For INIT and RQ MSN evaluations, evaluate area 62 (Air-to-Air Refueling) IAW with the approved formal training unit MSN qualification syllabus. For all evaluations, when area 62 is evaluated on a separate flight or SIM flight prior to the other MSN areas or on a separate flight or SIM flight after the other MSN areas, annotate as a separate MSN or SIM MSN “Aircrew Evaluation” on the examinee’s AF Form 8, IAW AFMAN 11-202V2. SPOT evaluations are appropriate for examinees who are evaluated on area 62 outside of their periodic MSN eligibility period, or for BAQ pilots establishing qualification as air-to-air refueling pilots establishing an initial currency date.

4.6. Special Qualifications. Not applicable.

Table 4.1. P/CP INSTM/QUAL Grading Areas.

Area	Notes	Area Name	QUAL	INSTM
30	2	Ground Operations/Taxi	X	
31	1	Takeoff	X	
32	5	Instrument Departure		X
33	2	En Route Navigation		X
34	2	Descent/Arrival Procedures		X
35	1	Holding/Procedure Turn		X
36	1, 4, 6	Precision Approach (Precision Approach Radar (PAR), Instrument Landing System (ILS)) or CAT II ILS		X

37	1, 4, 6	Non-Precision Approach (Tactical Air Navigation (TACAN), Very High Frequency Omnidirectional Range (VOR), Localizer (LOC), Non-Directional Beacon (NDB), Airport Surveillance Radar (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	2	Visual Flight Rules Procedures/Patterns	X	
43		Final Approach and Landing	X	
43a	1	100 Percent Flap Landing	X	
43b	1	50 Percent Flap Landing	X	
43c	2, 3	No Flap Landing	X	
43d	1	Engine-Out Landing	X	
43e	1	Touch-and-Go Landing	X	
44	2	After Landing/Engine Shutdown	X	
45	2	Fuel Conservation	X	
46		Automation Management		X
47-49		Reserved for Future Use		

Notes:

1. Required in-flight or simulator certified for this event.
2. In-flight or alternate method.
3. Aircraft commanders/instructors only.
4. Only one of the two required approaches may be controller directed (PAR/ASR).
5. Instrument Departures should transition to instruments below 100 feet.
6. Instrument Approaches should transition to outside references at/above approach minimums.

Table 4.2. P/CP MSN Grading Areas.

Area	Notes	Area Name
50	1	Tactical Navigation
51	2	Prestrike
52	1	Tweak Procedures
53	1	Geometry Analysis
54	1, 4	Target Acquisition
55-56		Reserved for future use
57	1	Precision Guided Munitions (PGM) Employment
58	2	A. Employment Tactics (Any Two): Close Air Support (CAS) Convoy Escort Urban Operations Troops in Contact (TIC) Fighter Integration Air Interdiction (AI) Targets of Opportunity/Armed Reconnaissance Preplanned Multi-weapon Engagement PGM/Gun PGM/PGM Dual Target Attack Force Protection Airbase Defense Point Defense Helicopter Escort
59	1	Threat/Countermeasures
60	1	Reserved for Future Use – Threat Identification and Notification
61	1, 4	Tactical Recovery (IPRA, overhead, downwind, random shallow/steep)
62	1, 5	Air-to-Air Refueling

63	2	Systems Operation/Knowledge/Limitations
64		Authentication/Encode-Decode Procedures
65-99		Reserved for Future Use
Notes: 1. Required in-flight or WST certified for this event. 2. In-flight, WST certified for this event, or alternate method. 3. Aircraft commanders/instructors only. 4. CPs perform CP duties only. 5. When possible complete on INIT MSN EVAL. If unavailable complete via SPOT EVAL. SPOT may be accomplished prior to INIT MSN EVAL if training requirements are complete.		

Table 4.2. (AETC) P/CP MSN Grading Areas.

Area	Notes	Area Name
50	1	Tactical Navigation
51	2	Prestrike
52	1	Tweak Procedures
53	1	Geometry Analysis
54	1, 4, 6	Target Acquisition
55-56		Reserved for future use
57	1	Precision Guided Munitions (PGM) Employment
58	2	A. Employment Tactics (Any Two): Close Air Support (CAS) Convoy Escort Urban Operations Troops in Contact (TIC) Fighter Integration Air Interdiction (AI) Targets of Opportunity/Armed Reconnaissance Preplanned Multi-weapon Engagement PGM/Gun

		PGM/PGM Dual Target Attack Force Protection Airbase Defense Point Defense Helicopter Escort
59	1	Threat/Countermeasures
60	1	Reserved for Future Use – Threat Identification and Notification
61	1, 4, 7	Tactical Recovery (IPRA, overhead, downwind, random shallow/steep)
62	1, 5	Air-to-Air Refueling (AAR)
63	2	Systems Operation/Knowledge/Limitations
64		Authentication/Encode-Decode Procedures
65-99		Reserved for Future Use
Notes: 1. Required in-flight or WST certified for this event. 2. In-flight, WST certified for this event, or alternate method. 3. Aircraft commanders/instructors only. 4. CPs perform CP duties only. 5. When possible complete on INIT MSN EVAL. If unavailable complete via SPOT EVAL. SPOT may be accomplished prior to INIT MSN EVAL if training requirements are complete. 6. (Added) AETC AC-130J FEs will not evaluate area 54 for MC evaluations. 7. (Added) INIT, RQ, and periodic MC MSN examinees performing area 61 must be in the pilot flying (PF) role.		

Table 4.3. General Criteria.

Q	Altitude	+/- 200 feet
	Airspeed	+10/- 5 knots (but not less than Minimum Control Airspeed)
	Course	+/- 5 degrees/3 nautical mile (nm) (whichever is greater)
	Arc	+/- 2nm
Q-	Altitude	+/- 300 feet
	Airspeed	+15/- 10 knots (but not less than Minimum Control Airspeed)
	Course	+/- 10 degrees/5nm (whichever is greater)
	Arc	+/- 3nm
U		Exceeded Q- limits

4.7. Grading Criteria.

4.7.1. Areas 1 through 19: Use general evaluation grading criteria in [Chapter 2](#) of this volume.

4.7.2. Areas 20 through 29: Use instructor grading criteria in [Chapter 3](#) (if applicable).

4.7.3. Areas 30 through 99: The following subparagraphs contain the evaluation grading criteria for the grading areas listed in [Table 4.1](#) and [Table 4.2](#). Note: The general criteria in [Table 4.3](#), apply during all phases of flight except as noted for specific events and instrument final approaches.

4.7.3.1. Area 30. Ground Operations/Taxi.

4.7.3.1.1. Q. Established and adhered to station, start engine, taxi, and take-off times to assure thorough preflight, check of personal equipment, crew/passenger briefings. Accurately determined readiness of aircraft for flight. Performed all checks prior to takeoff.

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

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

4.7.3.2. Area 31. Takeoff.

4.7.3.2.1. Q. Maintained smooth, positive aircraft control throughout takeoff. Maintained centerline +/- 15 ft. Properly applied takeoff data.

4.7.3.2.2. Q-. Minor deviations which did not affect safety of flight. Control was somewhat rough or erratic. Hesitant in application of procedures or corrections. Centerline +/- 25 feet.

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

4.7.3.3. Area 32. Instrument Departure.

4.7.3.3.1. Q. Performed departure as published/directed and complied with all restrictions or controlling agency instructions. Made all required reports. Applied course/heading corrections promptly. Demonstrated smooth, positive aircraft control.

4.7.3.3.2. 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.

4.7.3.3.3. U. Failed to comply with published/directed departure, or controlling agency instructions. Accepted an inaccurate clearance. Aircraft control was erratic.

4.7.3.4. Area 33. En Route Navigation.

4.7.3.4.1. Q. Satisfactory capability to navigate using all available means. Used appropriate navigation procedures. Ensured Navigational Aids (NAVAIDs) were properly tuned, identified, and monitored. Complied with clearance instructions. Aware of position at all times. Remained within the confines of assigned airspace.

4.7.3.4.2. 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.

4.7.3.4.3. 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.

4.7.3.5. Area 34. Descent/Arrival Procedures.

4.7.3.5.1. Q. Performed descent as directed. Complied with all restrictions. Properly set altimeters and ensured NAVAIDs properly set.

4.7.3.5.2. Q-. Performed descent as directed with minor deviations that did not compromise mission safety. Slow to comply with controller instructions, set proper altimeter setting. Delayed in ensuring NAVAIDs were properly set. Slow to make corrections.

4.7.3.5.3. U. Performed descent with major deviations. Failed to follow controller instructions. Failed to ensure NAVAIDs or altimeters set properly. Erratic corrections were observed.

4.7.3.6. Area 35. Holding/Procedure Turn.

4.7.3.6.1. Q. Performed entry and holding correctly IAW AFMAN 11-217 *Flying Operations* and AFI 11-202 Vol 3. Ensured NAVAIDs set properly. Holding pattern limits exceeded by not more than:

4.7.3.6.1.1. Very High Frequency Omnidirectional Range (VOR) Leg timing: +/- 15 seconds

4.7.3.6.1.2. Tactical Air Navigation (TACAN): +/- 1.5nm

4.7.3.6.2. Q-. Performed entry and holding procedures with minor deviations. Delayed in ensuring NAVAIDs set properly. Holding pattern limit exceeded by not more than:

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

4.7.3.6.2.2. TACAN: +/- 2nm.

4.7.3.6.3. U. Holding not in accordance with AFMAN 11-217 and AFI 11-202 Vol 3. Exceeded "Q-" holding pattern limits.

4.7.3.7. Area 36. Precision Approach (Precision Approach Radar (PAR) or Instrument Landing System (ILS)).

4.7.3.7.1. Precision Approach Radar (PAR).

4.7.3.7.1.1. Q. Approach was IAW AFMAN 11-217 and AFI 11-202 Vol 3. Smooth and timely response to controller's instructions. Complied with decision height. Position would have permitted a safe landing. Maintained glide path with only minor deviations.

4.7.3.7.1.1.1. Airspeed: +10/-5 knots.

4.7.3.7.1.1.2. Heading: Within 5 degrees of controller instructions.

4.7.3.7.1.2. Q-. Performed approach with minor deviations. Slow to make corrections or react to controller's instructions. Position permitted a safe landing. Improper glide path control. Initiated missed approach as directed or at decision height +50/-0 feet, if applicable.

4.7.3.7.1.2.1. Airspeed: +15/-5 knots.

4.7.3.7.1.2.2. Heading: Within 10 degrees of controller's instructions.

4.7.3.7.1.3. U. Approach not IAW AFMAN 11-217 and AFI 11-202 Vol 3. Erratic corrections or did not react to controller's instructions. Did not comply with decision height and/or position would not have permitted a safe landing. Exceeded "Q-" limits.

4.7.3.7.2. Instrument Landing System Approach.

4.7.3.7.2.1. Q. Performed procedures as published and IAW applicable directives. Smooth and timely corrections to azimuth and glide slope. Complied with decision height and position permitted a safe landing.

4.7.3.7.2.1.1. Airspeed: +10/-5 Knots Indicated Air Speed (KIAS)

4.7.3.7.2.1.2. Glide slope/azimuth within one dot.

4.7.3.7.2.2. Q-. Performed procedures with minor deviations. Slow to make corrections or initiate procedures. Position would have permitted a safe landing. Initiated missed approach at decision height +50/-0 feet, if applicable.

4.7.3.7.2.2.1. Airspeed: +15/-5 KIAS.

4.7.3.7.2.2.2. Glide slope within one-dot low/two dots high.

4.7.3.7.2.2.3. Azimuth within one dot.

4.7.3.7.2.3. U. Performed procedures with major deviations. Erratic course/glide slope corrections. Did not comply with decision height or position would not have permitted a safe landing. Exceeded "Q-" criteria.

4.7.3.8. Area 37. Non-Precision Approach (Tactical Air Navigation (TACAN), Very High Frequency Omnidirectional Range (VOR), Localizer (LOC), Non-Directional Beacon (NDB), Airport Surveillance Radar (ASR)).

4.7.3.8.1. Q. Approach was IAW AFMAN 11-217 and AFI 11-202 Vol 3. Used appropriate descent rate to arrive at Minimum Decision Altitude (MDA) at or before Visual Descent Point (VDP). Position permitted a safe landing. Smooth and timely response to Airport Surveillance Radar (ASR) controller's instructions.

4.7.3.8.1.1. Airspeed: +10/-5 knots.

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

4.7.3.8.1.3. Course: +/-5 degrees at Missed Approach Point (MAP).

4.7.3.8.1.4. Localizer: Less than one dot deflection.

4.7.3.8.1.5. MDA: +100/-0 feet.

4.7.3.8.2. Q-. Performed approach with minor deviations. Arrived at MDA at or before the MAP, but past the VDP. Initiated missed approach/go-around as directed or appropriate. Slow to make corrections or react to ASR controller's instruction.

4.7.3.8.2.1. Airspeed: +15/-5 knots.

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

4.7.3.8.2.3. Course: +/-10 degrees at MAP.

4.7.3.8.2.4. Localizer: Within one dot deflection.

4.7.3.8.2.5. MDA: +150/-50 feet.

4.7.3.8.3. U. Approach not IAW AFMAN 11-217 and AFI 11-202 Vol 3. Maintained steady-state flight below the MDA, even though the -50 foot limit was not exceeded. Could not land safely from approach and did not initiate missed approach/go-around when appropriate or directed. Exceeded Q- criteria. Erratic corrections or did not react to ASR controller's instructions.

4.7.3.9. Area 38. Circling/Side-Step Approach.

4.7.3.9.1. Q. Properly identified aircraft category for the approach and remained within the lateral limits for that 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.

4.7.3.9.1.1. Airspeed: +10/-5 knots. 4.7.3.9.1.2. Altitude: +100/-0 feet.

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

4.7.3.9.2.1. Airspeed: +15/-5 knots.

4.7.3.9.2.2. Altitude: +150/-50 feet.

4.7.3.9.3. U. Did not properly identify aircraft category or 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.

4.7.3.10. Area 39. Engine-Out Approach (Use approach criteria for the type of approach being flown and the following).

4.7.3.10.1. Q. Performed procedures IAW TOs and associated directives. Individual technique complied with established procedures. Proper control inputs were used to correct asymmetric condition. Aircraft was properly trimmed. Proper consideration was given to maneuvering with regard to the "dead" engine.

4.7.3.10.2. Q-. Minor deviations in procedures/aircraft control allowed the aircraft to occasionally be in uncoordinated flight. Unnecessary maneuvering due to minor errors in planning or judgment.

4.7.3.10.3. U. Major/unsafe deviations from procedures. Individual technique unsafe or in violation of established procedures. Aircraft was not properly trimmed. Aircraft control was erratic and consistently resulted in uncoordinated flight. Maneuvering with regard to the "dead" engine was potentially unsafe.

4.7.3.11. Area 40. Missed Approach/Go-Around.

4.7.3.11.1. Q. Executed missed approach IAW AFMAN 11-217 and AFI 11-202 Vol 3 and restrictions. Initiated and performed go-around promptly. Complied with controller's instructions. Applied smooth control inputs. Attained and maintained a positive climb.

4.7.3.11.2. Q-. Executed missed approach with minor deviations to AFMAN 11-217 and AFI 11-202 Vol 3. Was slow or hesitant to initiate go-around. Slow to respond to controller's instructions. Slightly over-controlled the aircraft.

4.7.3.11.3. U. Did not execute missed approach IAW AFMAN 11-217 and AFI 11-202 Vol 3. Did not comply with controller's instructions. Deviations or misapplication of procedures could have led to an unsafe condition. Exceeded "Q-" criteria.

4.7.3.12. Area 41. Engine-Out Go-Around (Use Area 43 criteria and the following).

4.7.3.12.1. Q. Applied smooth, coordinated control inputs. Rudder and aileron inputs were in the correct direction. Maneuvering appropriate with regard to the "dead" engine/Minimum Control Airspeed. Individual technique complied with established procedures.

4.7.3.12.2. Q-. Rudder and aileron inputs were in correct direction but some over/under control. Individual techniques were safe, but detracted from the maneuver.

4.7.3.12.3. U. Rudder and/or aileron inputs were incorrect. Maneuvering with regard to the "dead" engine/minimum control airspeed potentially unsafe. Failed to comply with/consider minimum control speeds. Individual technique unsafe or violated established procedures.

4.7.3.13. Area 42. Visual Flight Rules Procedures/Patterns.

4.7.3.13.1. Q. Adhered to published restrictions/local guidance. Performed traffic pattern and turn to final/final approach IAW TO procedures. Aircraft control was smooth and positive. Did not over/under-shoot final approach. Constantly cleared area of intended flight.

4.7.3.13.1.1. Airspeed: +10/-5 knots.

4.7.3.13.1.2. Pattern Altitude: +/- 100 feet.

4.7.3.13.2. 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 slightly but was able to intercept a normal glide path. Adequately cleared area of intended flight.

4.7.3.13.2.1. Airspeed: +15/-5 knots.

4.7.3.13.2.2. Pattern Altitude: +/- 200 feet.

4.7.3.13.3. U. Major/unsafe deviations from published restrictions/local guidance. Did not perform traffic pattern and turn to final/final approach IAW AFMAN 11-217 and AFI 11-202 Vol 3. 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.

4.7.3.14. Area 43. Final Approach and Landing. **Note:** The following criteria are written to generally apply to all landings. Flight examiners must apply these criteria judiciously to allow for the unique characteristics of each type of landing. Where runway/airfield lighting configuration, arresting cable placement, instrument procedures or TO limitations require an adjustment to the desired touchdown point, a simulated runway threshold will be identified and the grading criteria applied accordingly. 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 is made.

4.7.3.14.1. Area 43a. 100 Percent Flap Landing.

4.7.3.14.1.1. Q. Performed landing as published/directed. Crossed threshold at threshold speed +/- 5 knots at proper attitude. Smooth and positive aircraft control throughout round-out and flare. Touched down with no crab, and not more than 15 feet left or right of centerline. Complied with TO procedures for use of brakes and reverse thrust. Met the following criteria:

4.7.3.14.1.1.1. Touchdown Speed: +/-5 knots.

4.7.3.14.1.1.2. Touchdown Point: 1,000' – 2,000' from the actual/simulated runway threshold.

4.7.3.14.1.2. Q-. Performed landing with minor deviations to procedures as published/directed. Crossed threshold at threshold speed +10/-5 knots slightly high or low but no compromise of safety. Touched down not more than 25 feet left or right of centerline. Exceeded “Q” criteria but not the following:

4.7.3.14.1.2.1. Touchdown Speed: +10/-5 knots.

4.7.3.14.1.2.2. Touchdown Point: 0' – 1,000' or 2,001' – 3,000' from the actual/simulated runway threshold.

4.7.3.14.1.3. U. Landing not performed as published/directed. Crossed threshold excessively high or low and more than +10/-5 knots. Touched down excessively crabbed and more than 25 feet left or right of centerline. Failed to comply with TO procedures for the use of brakes and reverse thrust. Exceeded “Q-“ criteria.

4.7.3.14.2. Area 43b. 50 Percent Flap Landing. Use same criteria as Area 43a, 100 Percent Flap Landing.

4.7.3.14.3. Area 43c. No Flap Landing. Use same criteria as Area 43a, 100 Percent Flap Landing.

4.7.3.14.4. Area 43d. Engine-Out Landing. Use same criteria as Area 43a, 100 Percent Flap Landing.

4.7.3.14.5. Area 43e. Touch-and-Go Landing (Touchdown through Lift-off).

4.7.3.14.5.1. Q. Performed procedures in a timely manner and IAW TO and local directives. Smooth and positive control. Maintained runway centerline within 15 feet left or right throughout the touch and go.

4.7.3.14.5.2. Q-. Performed procedures with minor deviations. Aircraft control was safe, but not consistently smooth and positive. Delayed accomplishment of required checklists. Consistently left or right of centerline but within 25 feet.

4.7.3.14.5.3. U. Major deviations to procedures. Displayed erratic/unsafe aircraft control. Excessively delayed and/or misapplied required checklists. Allowed aircraft to drift/remain more than 25 feet left or right of centerline.

4.7.3.15. Area 44. After Landing/Engine Shutdown.

4.7.3.15.1. Q. Successfully reconfigured the aircraft IAW TO and instructions. Checklist accomplishment with no omitted required steps or prerequisites.

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

4.7.3.15.3. U. Failed to reconfigure the aircraft IAW TO and instructions. Major deviations in written procedures. Crew errors directly contributed to degrading the mission or making it ineffective. Omitted required checklist items.

4.7.3.16. Area 45. Fuel Conservation.

4.7.3.16.1. Q. Possessed a high level of knowledge of all applicable aircraft publications and other governing directives and understood how to apply both to

enhance fuel conservation. Successfully applied fuel conservation procedures during the mission.

4.7.3.16.2. Q-. Possessed some knowledge of applicable aircraft publications and other governing directives and understood how to apply both to enhance fuel conservation. Successfully applied some fuel conservation procedures, but missed several opportunities to apply fuel conservation procedures during the mission.

4.7.3.16.3. U. Unaware of fuel conservation procedures. Failed to apply any fuel conservation procedures during the mission.

4.7.3.17. Area 46. Automation Management

4.7.3.17.1. Q. Established/followed guidelines for the operation of automated systems; aware of when systems should be disabled, and when programming actions must be verbalized and acknowledged. Established/followed Pilot Flying (PF) and Pilot Monitoring (PM) responsibilities with regard to automated systems. Periodically reviewed and verified the status of aircraft automated systems. Verbalized and acknowledged entries and changes to automated systems parameters. Allowed sufficient time for programming the Communication/Navigation/Identification Management Unit (CNI-MU). Used automated systems at appropriate levels to reduce workload, but reduced or disengaged level of automation when programming demands could have reduced situational awareness or created work overloads.

4.7.3.17.2. Q-. Had limited knowledge of guidelines for the operation of automated systems; unclear as to when systems should be disabled, or when programming actions must be verbalized and acknowledged. Slow to establish/follow PF and PM responsibilities with regard to automated systems. Slow to review and verify the status of aircraft automated systems. Inconsistently verbalized and acknowledged entries and changes to automated systems parameters. Did not always allow sufficient time for programming the CNI-MU. Inconsistently used automated systems at appropriate levels.

4.7.3.17.3. U. Did not establish/follow guidelines for the operation of automated systems; unaware of when systems should be disabled, or programming actions that must be verbalized and acknowledged. Did not establish/follow PF and PM responsibilities with regard to automated systems. Did not periodically review and verify the status of aircraft automated systems. Did not verbalize and acknowledge entries and changes to automated systems parameters. Failed to allow sufficient time for programming the CNI-MU. Did not use automated systems at appropriate levels, to decrease workload. Did not reduce or disengage level of automation when programming demands reduced situational awareness or created work overloads.

4.7.3.18. Areas 47 through 49. Reserved for future use.

4.7.3.19. Area 50. Tactical Navigation.

4.7.3.19.1. Q. Direct the airplane in the tactical environment utilizing all available resources to achieve mission accomplishment. Thorough knowledge of aircraft guidance/position utilizing sensors/navigation systems/radar. Capable of interpreting bulls eye threat calls and calculating range and bearing.

- 4.7.3.19.2. Q-. Adequate knowledge of aircraft guidance/position utilizing sensors/navigation/radar. Minor errors or omissions that would not have adversely affected mission accomplishment. Slow to interpret bullseye threat calls and/or slow to calculate appropriate range and bearing.
- 4.7.3.19.3. U. Deviations of direction that resulted in mission failure. Improper use and knowledge of sensors/navigation equipment/radar. Unable to interpret bullseye threat calls and/or unable to calculate appropriate range and bearing.
- 4.7.3.20. Area 51. Prestrike.
 - 4.7.3.20.1. Q. Configured the aircraft for combat and completed all required checklists prior to crossing the combat-entry point IAW TO and instructions.
 - 4.7.3.20.2. Q-. Aircraft configuration or checklist completion caused minor delays to mission accomplishment.
 - 4.7.3.20.3. U. Failed to configure and/or accomplish required checklists prior to attempting munitions delivery.
- 4.7.3.21. Area 52. Tweak Procedures.
 - 4.7.3.21.1. Q. Possessed a high level of knowledge and understanding of the tweak concept. Coordinated with the crew to safely tweak IAW TO, instructions, and procedures. Accurate, stable aircraft allowed best tweak for conditions.
 - 4.7.3.21.2. Q-. Possessed some knowledge and understanding of the tweak concept. Minor deviations from procedures and/or unstable aircraft control, which did not cause an unsafe condition or an unusable tweak.
 - 4.7.3.21.3. U. Unsatisfactory knowledge and performance of tweak. Erratic aircraft control and/or deviations from TOs/instructions resulted in a potentially unsafe condition or an unusable tweak.
- 4.7.3.22. Area 53. Geometry Analysis.
 - 4.7.3.22.1. Q. Understand and made appropriate corrections to the variables which effect geometry as listed in TO and AFI.
 - 4.7.3.22.2. Q-. Minor deviations with no impact on mission.
 - 4.7.3.22.3. U. Improper corrections causing major deviations/delays to mission accomplishment.
- 4.7.3.23. Area 54. Target Acquisition (Except CP).
 - 4.7.3.23.1. Q. P will be able to coordinate with tactical crew to acquire the correct target/friendly position IAW TO, AFIs, and Rules of Engagement (ROE).
 - 4.7.3.23.2. Q-. Had minor difficulty accurately identifying targets and or unsure of aircraft position based on targets. Made minor errors that did not affect target acquisition.
 - 4.7.3.23.3. U. For the conditions listed in “Q” criteria, Ps crew coordination or lack of coordination contributed, or resulted in, inability to acquire target.
- 4.7.3.24. Area 55-56. Reserved for Future Use.

4.7.3.25. Area 57. Precision Guided Munitions (PGM) Employment.

4.7.3.25.1. Q. Completed PGM employment IAW tech orders, checklists, and instructions. Individual technique complied with established procedures.

4.7.3.25.2. Q-. Minor deviations from established PGM employment procedures. Individual technique was safe, but detracted from established procedures. Used individual technique instead of established procedure and was unaware of differences.

4.7.3.25.3. U. Failed PGM employment critical component or could not conduct a satisfactory PGM employment. Individual technique was unsafe and/or in violation of established procedures.

4.7.3.26. Area 58. Employment Tactics.

4.7.3.26.1. Q. Referenced appropriate publications, manuals, TO, AFI, Order of Battle, ROE, Special Instructions, Air Tasking Order (ATO), and coordinate with Liaison Officers (LNO) to develop a comprehensive offensive employment plan and apply it in the aircraft.

4.7.3.26.2. Q-. Minor deviations from “Q” criteria that did not impair mission accomplishment.

4.7.3.26.3. U. Major deviations that lead to impairment of mission accomplishment.

4.7.3.27. Area 59. Threat/Countermeasures.

4.7.3.27.1. Q. Demonstrated satisfactory knowledge of defensive systems and thorough knowledge of tactics applicable to the mission. Applied appropriate tactics to avoid the threat and minimize exposure. Understood chaff, flare and ECM restrictions while operating on the range. Made timely and appropriate inputs to crew during mission. Communicated threat in and out of the aircraft appropriately.

4.7.3.27.2. Q-. Limited knowledge of defensive systems. Made minor errors in avoiding the lethal range of a given threat system. Slow to execute the proper evasive maneuver. Minor errors in threat analysis or tactics selection. Limited knowledge of chaff, flare and ECM restrictions on the range. Did not make timely inputs to crew during mission. Slow to communicate threat in and out of the aircraft.

4.7.3.27.3. U. Knowledge of defensive systems was unsatisfactory. Did not avoid lethal range of given threat system. Did not execute an effective evasive maneuver when given an immediate threat. Failed to ensure mission effectiveness by not adequately analyzing or degrading threat(s). Did not understand chaff, flare and ECM restrictions on the range. Not aware of appropriate tactics for specific threats or terrain. Failed to communicate threat in and/or out of the aircraft.

4.7.3.28. Area 60. Reserved for future use

4.7.3.29. Area 61. Tactical Recovery. **Note:** Examples include IPRA's, overheads, downwind, random steep/shallow.

4.7.3.29.1. Q. Followed procedures as briefed and IAW flight manual and AFMAN 11-2AC-130J Vol 3 *AC-130J General Operations Procedures*, 10 Jan 2019. Displayed smooth, positive control throughout the recovery. Aircraft was in position to intercept

glide path for normal landing. Gave proper consideration to threat location and adjusted pattern accordingly. Consistently cleared area of intended flight.

4.7.3.29.2. Q-. Performed recovery with minor deviations. Aircraft control was not consistently positive and smooth. Over/under-shot final approach slightly but was able to intercept glide path for normal landing.

4.7.3.29.3. U. Recovery not performed IAW flight manual and AFMAN 11-2AC-130J Vol 3. Displayed erratic aircraft control. Over/under-shot final approach, requiring a go-around or potentially unsafe maneuvering to intercept final. Failed to consider threat location or proximity and/or maneuvering could have placed the aircraft within lethal range of given threat system. Did not clear area of intended flight.

4.7.3.30. Area 62. Air-to-Air Refueling Procedures.

4.7.3.30.1. Q. Rendezvous effectively accomplished using proper procedures. Demonstrated effective/appropriate use of radio communications for briefed Emission Control option. Expeditiously established and maintained proper position. Aircraft control was positive and smooth. Maintained the contact position for 10 minutes (at least 5 minutes continuous) with no more than one pilot-induced disconnect.

4.7.3.30.2. Q-. Rendezvous delayed by improper techniques, procedures or radio communications. Slow to recognize and apply needed corrections to establish and maintain proper position. Aircraft control was not always positive and smooth, but adequate. Accomplished published/directed procedures with deviations or omissions that did not affect the successful completion of air refueling. Maintained the contact position for at least 10 minutes with no more than two pilot-induced disconnects.

4.7.3.30.3. U. Displayed lack of knowledge or familiarity with procedures to the extent that air refueling was or could have been jeopardized. Failed rendezvous as a result of improper procedures. Spent excessive time in trail. Aircraft control in the pre-contact/refueling position was erratic or unsafe. Made deviations or omissions that affected flight safety and/or the successful completion of the air refueling. Used unacceptable procedures. Performance caused more than two pilot-induced disconnects and/or delayed mission accomplishment.

4.7.3.31. Area 63. Systems Operation/Knowledge/Limitations.

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

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

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

4.7.3.32. Area 64. Authentication/Encode-Decode Procedures

4.7.3.32.1. 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.

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

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

4.7.3.33. Area 65 through 99. Reserved for Future Use.

Chapter 5

COMBAT SYSTEMS OFFICER (CSO) EVALUATIONS

5.1. General. Examinees must satisfactorily demonstrate the ability to perform all CSO duties safely and effectively, including the operation of appropriate aircraft systems, IAW applicable TO and directives. (T-2)

5.2. Requirements. Refer to [Chapter 2](#) for all evaluations. Instructors will demonstrate instructor duties on all evaluations; refer to [Chapter 3](#) for instructor evaluation grading areas and criteria. CSO specific areas are listed in this chapter. (T-2)

5.3. Requisites. Requisites for all CSO evaluations include open and closed book examinations (or formal school end-of-course examinations if applicable), Boldface examination, and EPE. The various CSO evaluations are described in following paragraphs: (T-2)

5.3.1. QUAL Evaluations. After completion of the appropriate training, CSO's may receive a QUAL evaluation enabling them to fly non-mission sorties if required and directed by the flying unit commander. This should only be done on a case-by-case basis. Thereafter, they require, at a minimum, recurring QUAL evaluations. See grading event criteria in [Chapter 2](#) and [Chapter 3](#), and [Table 5.1.](#), Notes 4 and 5 for Basic QUAL required evaluation areas. (T-2)

5.3.1. (AETC) CSO QUAL evaluation includes completion of AC-130J CSO/WSO QUAL/MSN open book and CSO/WSO QUAL/MSN closed book exams, boldface, and EPE requisites, evaluation of applicable areas listed in [Table 2.1](#), and all areas marked with an "X" in the QUAL column of [Table 5.1](#).

5.3.2. Initial/Requalification MSN Evaluation. Initial MSN events required in-flight include a live fire, dry-fire scenario, Electronic Countermeasures (ECM) activity with ground radar, naval radar, or airborne interceptors radar threat reaction (either radar surface-to-air or radar air defense artillery), and a CSO-directed tactical recovery. The dry-fire portion will include a close air support (CAS) scenario with a PGM engagement. ECM airspace should be scheduled to the max extent possible. When maneuvering airspace is not available in conjunction with ECM, then tactical threat maneuvers will be conducted in the dry fire area. At least one tactical threat engagement/intercept will be performed. See grading event criteria in [Chapter 2](#), [Chapter 3](#), and [Table 5.1.](#) A QUAL evaluation will be conducted in conjunction with the INIT or RQ MSN evaluation if possible. AAR will be graded if accomplished during evaluation, but is not required for completion of initial or RQ evaluations. A CSO directed tactical recovery includes IPRA, Random Shallow, Random Steep, Penetration Descent, Visual Navigation, or any recovery in which the Evaluator can properly assess Terminal Area Navigation skills. (T-2)

5.3.3. Periodic Qualification/Mission Evaluation. CSO maintaining mission qualification require a periodic combined QUAL/MSN evaluation. Conduct the QUAL/MSN evaluation in the eligibility period corresponding to the earliest expiration date. Required in-flight events are the same as initial/requalification evaluations except that at least one tactical engagement/intercept must be performed. QUAL/MSN evaluations will include all areas in [Chapter 2](#) and [Chapter 3](#) (if applicable) and [Table 5.1.](#) AAR will be graded if accomplished during evaluation, but is not required for completion of periodic evaluation. (T-2)

5.3.3. (AETC) CSO MSN evaluation includes completion of AC-130J CSO/WSO QUAL/MSN open book and CSO/WSO QUAL/MSN closed book exams, evaluation of applicable areas listed in [Table 2.1](#), and all areas marked with an “X” in the MSN column of [Table 5.1](#).

5.3.3.1. Periodic evaluations will consist of a live fire, dry fire, a PGM employment (PGM employment may be conducted live or dry), AND a CSO direct tactical recovery. In addition, a radar threat reaction (either radar surface-to-air missile or radar air defense artillery) will be performed. (T-2)

5.3.3.2. ECM airspace should be scheduled to the max extent possible. ECM activity should include tactical maneuvers against a cross-section of available signals. When maneuvering airspace available in conjunction with ECM is not available, then tactical threat maneuvers will be conducted in the dry fire area. One tactical threat engagement/intercept will be performed. A minimum of one pre-briefed threat will be placed in the dry fire scenario. (T-2)

5.3.4. Special Qualification Evaluations. Not applicable.

5.3.5. (Added-AETC) CSO Air-to-Air Refueling Procedures ([Table 5.1](#) areas 108 (AAR Procedures) and 112 (Air-to-Air Refueling Procedures) and [paragraph 5.4.3.13](#)) are variously described as required for either the QUAL evaluation or the MSN evaluation and variously noted, or not, as “required in-flight or WST certified for this event.” For the purposes of standardization, AAR Procedures (area 108) and Air-to-Air Refueling Procedures (area 112) are both “optional – evaluate, if observed” for the completion of either a CSO QUAL or MSN evaluation or a combined QUAL/MSN evaluation and may be completed in any simulator certified for this event. Air-to-air refueling areas may be evaluated on a separate aircraft flight (MSN) or simulator flight (SIM MSN) and included as a second sortie on the same AF Form 8.

Table 5.1. CSO Grading Areas.

Area	Note	Area Name	QUAL	MSN
100	1,3	Departure	X	
101	1,3	Approach/Landing	X	
102	1,3	Flight Plan/Charts	X	
103	1,3	Fuel Planning	X	
104	1,3	Navigation Procedures	X	
105	1,3	Radio Navigation	X	
106	1,3	Radar Navigation/Weather Avoidance	X	
107	1,3	Navigation and Avionics Systems	X	
108	1	AAR Procedures		X
109	2,3	Dead Reckoning (DR)/Rating of Navigational Computers	X	

110	1,3	Course and Estimated Time of Arrival (ETA) Tolerance	X	
111	1,3	Fuel Management	X	
112		Air-to-Air Refueling Procedures		X
113	1,3	Briefings		X
114	1	Defensive Systems, Tactics and Threat Analysis		X
115	1	Fire Control Systems and Displays/Sensor Systems/Weapons Systems		X
116	1	Employment Tactics		X
117	1	Communication Procedures/Radio Transmission – Usage and Discipline		X
118	1	Target Acquisition/Confirmation		X
119	2	Reconnaissance/Search		X
120	2	Degraded Operations		X
121	1	CSO-Directed Tactical Recovery Procedures		X
122	1	Weapons Employment		X
123	1	Time to Navigational Point/Fix		X
124	2	Time to Weapons Impact (PGM)		X
125	2	Local Range/Aerodrome Procedures		X
126	2	PSP Mission Management		X
127-149		Reserved for future use		

Notes:

1. Required in-flight or WST certified for this event.
2. Required in-flight or alternate method.
3. Required for QUAL portion of flight evaluations.

Table 5.1. (AETC) CSO Grading Areas.

Area	Notes	Area Name	QUAL	MSN
100	1, 3	Departure	X	
101	1, 3	Approach/Landing	X	
102	1, 3	Flight Plan/Charts	X	
103	1, 3	Fuel Planning	X	
104	1, 3	Navigation Procedures	X	
105	1, 3	Radio Navigation	X	
106	1, 3	Radar Navigation/Weather Avoidance	X	
107	1, 3	Navigation and Avionics Systems	X	
108	1	AAR Procedures		X
109	2, 3	Dead Reckoning (DR)/Rating of Navigational Computers	X	
110	1, 3	Course and Estimated Time of Arrival (ETA) Tolerance	X	
111	1, 3	Fuel Management	X	
112		Air-to-Air Refueling Procedures		X
113	1, 3	Briefings		X
114	1	Defensive Systems, Tactics and Threat Analysis		X
115	1	Fire Control Systems and Displays/Sensor Systems/Weapons Systems		X
116	1	Employment Tactics		X
117	1	Communication Procedures/Radio Transmission – Usage and Discipline		X
118	1	Target Acquisition/Confirmation		X
119	2	Reconnaissance/Search		X
120	2	Degraded Operations		X
121	1	CSO-Directed Tactical Recovery Procedures		X
122	1	Weapons Employment		X
123	1	Time to Navigational Point/Fix		X
124	2	Time to Weapons Impact (PGM)		X
125	2	Local Range/Aerodrome Procedures		X
126	2	PSP Mission Management		X

127-149		Reserved for future use		
220 (Added)	2	Tweak Procedures		X
221 (Added)	2	Strike Procedures (PGM)		X
222 (Added)	2	Strike Procedures (Gun)		X
223 (Added)	2	Close Air Support/Troops in Contact		X
224 (Added)	2	Force Protection		X
225 (Added)	1	Tactical Navigation		X
Notes: 1. Required in-flight or WST certified for this event. 2. Required in-flight or alternate method. 3. Required for QUAL portion of flight evaluations.				

5.4. Grading Criteria.

5.4.1. Areas 1 through 19: Use general grading criteria in [Chapter 2](#) of this volume.

5.4.2. Areas 20 through 29: Use instructor evaluation grading criteria in [Chapter 3](#) of this volume (if applicable).

5.4.3. Areas 100 through 149: The following subparagraphs contain the evaluation criteria for the areas listed in [Table 5.1.](#)

5.4.3.1. Area 100 Departure (QUAL).

5.4.3.1.1. Q. Monitored headings, airspeeds, altitudes and aircraft position throughout departure. Used an instrument departure procedure and/or appropriate scale departure area chart. Provided headings, ETA, and other required information in a timely manner. Monitored appropriate radios and clearances to ensure crew compliance. Provided updated information when the clearance caused a change in the planned departure. Ensured terrain clearance during departure by use of all available aids and the area chart.

5.4.3.1.2. Q-. Monitored aircraft position, but slow to provide headings, ETA, or other required information. Performance did not degrade mission accomplishment or compromise flight safety.

5.4.3.1.3. U. Did not monitor departure headings, airspeeds or altitudes. Unaware of aircraft position and unable to provide updated information when required. Did not use an instrument departure procedure and/or an appropriate scale departure area chart. Allowed major deviations that degraded mission accomplishment or compromised safety. Did not ensure terrain clearance during the departure. No area chart available.

5.4.3.2. Area 101. Approach/Landing (QUAL).

5.4.3.2.1. Q. Monitored aircraft position, approach instructions and primary approach navigation aids. Provided headings, ETAs and other information to the P as required. Thoroughly understood approach and missed approach procedures. Ensured terrain clearance during approach by use of all available aids and area chart.

5.4.3.2.2. Q-. Monitored aircraft position but did not fully understand approach instructions/procedures. Slow to provide headings, ETAs or other appropriate information.

5.4.3.2.3. U. Failed to monitor aircraft position. Did not ensure terrain clearance during the approach. Did not use appropriate chart.

5.4.3.3. Area 102. Flight Plan/Charts (QUAL).

5.4.3.3.1. Q. Completed a flight plan IAW applicable directives. Selected current navigation charts of a proper scale and type of the sortie profile. Charts were constructed IAW current directives. Demonstrated proper manual flight planning procedures, if required.

5.4.3.3.2. Q-. Flight plan/charts contained minor errors or omissions that would not have adversely affected mission accomplishment.

5.4.3.3.3. U. Flight plan not accomplished, incomplete, or contained major errors that adversely affected mission accomplishment. Could not demonstrate manual procedures, or failed to review computer generated flight plan.

5.4.3.4. Area 103. Fuel Planning (QUAL).

5.4.3.4.1. Q. Completed a fuel plan IAW applicable directives. Used correct entering arguments (examples include temp dev, altitudes, drag index, gross weight, cargo weight) for manual or computer generated fuel plans. Correctly computed an Equal Time Point (ETP), when required.

5.4.3.4.2. Q-. Fuel plan contained minor errors or omissions that would not have adversely affected mission accomplishment.

5.4.3.4.3. U. Fuel plan not accomplished, incomplete, or contained major errors. ETP not completed or contained major errors or omissions.

5.4.3.5. Area 104. Navigation Procedures (QUAL).

5.4.3.5.1. Q. Certain of exact aircraft position. Remained within 3nm of course centerline or planned deviation (Exceptions: examples include threat avoidance, weather deviation, Air Traffic Control assigned heading, time control). Thorough knowledge of en route time status in relation to objective area. Complied with all altitude restrictions. Adhered to all airspace restrictions.

5.4.3.5.2. Q-. Uncertain of exact aircraft position due to marginal navigational procedures. Flew 3 to 5nm from course without the above exceptions. Better awareness of required timing events or en route time status could have avoided excessive, unplanned maneuvering.

5.4.3.5.3. U. Exceeded 5nm during en route navigation without the above exceptions. Was unable to maintain position awareness throughout most of the route. Unable to

accurately assess required timing or unaware of mission time status, jeopardizing mission accomplishment. Violated airspace restrictions. Descended below minimum altitude restrictions.

5.4.3.6. Area 105. Radio Navigation (QUAL).

5.4.3.6.1. Q. Accurately tuned, identified, and interpreted readings of TACANs, VORs or Non-Directional Beacons (NDBs).

5.4.3.6.2. Q-. Better use of radio aids could have enhanced navigation. Displayed weakness in fixing or plotting procedures.

5.4.3.6.3. U. Unable to accurately tune and identify radio aids. Did not understand VOR/TACAN/NDB bearing procedures or was unable to obtain position by means of radio aids.

5.4.3.7. Area 106. Radar Navigation/Weather Avoidance (QUAL).

5.4.3.7.1. Q. Demonstrated thorough knowledge and understanding of radar equipment. Used correct procedures for radar operation and weather avoidance procedures. Maintained proper distance from adverse weather.

5.4.3.7.2. Q-. Demonstrated adequate knowledge of equipment, but occasionally used improper operating procedures. Did not update radar/weather analysis while avoiding known weather. Had difficulty identifying radar returns. Weather avoidance was safe with minor deviation from prescribed procedures.

5.4.3.7.3. U. Displayed unsatisfactory knowledge of radar equipment. Used improper operating procedures that were potentially harmful to system components. Failed to correctly interpret scope returns. Displayed unsatisfactory knowledge of weather avoidance procedures.

5.4.3.8. Area 107. Navigation and Avionics Systems (QUAL).

5.4.3.8.1. Q. Demonstrated a thorough knowledge of onboard navigation system operating procedures. Effectively used navigation systems to direct the aircraft and update system as required.

5.4.3.8.2. Q-. Demonstrated a basic knowledge of onboard navigation systems and/or avionics systems. Made minor errors in operation/interpretation of navigation system data. More selective updating could have increased system effectiveness.

5.4.3.8.3. U. Displayed inadequate knowledge of onboard navigation systems procedures. Improper operation procedures could have resulted in damage to equipment or affected mission accomplishment. Failed to update or correctly interpret navigation system data.

5.4.3.9. Area 108. Air-To-Air Refueling Systems/Procedures.

5.4.3.9.1. Q. Effectively accomplished and was fully knowledgeable of air-to-air refueling operations and procedures. Properly completed refueling portion of fuel planning as applicable to the mission. Demonstrated effective/appropriate use of radio communications for briefed emissions control level. Performed all pre-refueling, refueling, and post-refueling checks in accordance with applicable checklist and

directives. Satisfactorily managed/monitored fuel systems and onload distribution in accordance with procedures and techniques outlined in the flight manual, checklist, and other directives. Correctly identified and located system components, explained and related their functions, and specified the limitations. Stated correct system status and its effect on related systems. Recognized malfunctions and applied proper corrective action(s).

5.4.3.9.2. Q-. Limited knowledge of AAR operations and procedures. Performed pre-refueling, refueling, and post-refueling checks with some minor deviations/omissions that did not affect successful accomplishment of air-to-air refueling. Limited management/monitoring of fuel systems and onload distribution in accordance with procedures and techniques outlined in the flight manual, checklist, and other directives. Limited knowledge of identification, location, functions, and limitations of system components. Stated correct system status, but could not determine its effect on related systems. Delay in recognizing malfunctions and/or applying proper corrective action(s). Minor errors in the refueling portion of fuel planning as applicable to the mission.

5.4.3.9.3. U. Displayed lack of knowledge or familiarity with procedures to the extent that AAR was or could have been jeopardized. Failed rendezvous as a result of improper procedures. Inadequate knowledge of fuel system management or exceeded wing fuel balance limitations. Could not identify, locate, or relate systems functions and limitations. Could not determine status of system or its effect on related system. Failed to recognize malfunctions and/ or apply corrective action(s).

5.4.3.10. Area 109. Dead Reckoning (DR)/Rating of Navigational Computers (QUAL).

5.4.3.10.1. Q. Made effective use of DR/Rating of navigational computers during aircraft positioning. Computed or plotted positions within 5nm, selecting the most reliable information.

5.4.3.10.2. Q-. Occasionally did not identify the navigational computer providing the most reliable information or used improper DR procedures resulting in erroneous ETAs or headings. Computed or plotted position error did not exceed 10nm.

5.4.3.10.3. U. Was unable to use DR/Rate navigational computers effectively. Computed or plotted position error exceeded "Q-" criteria.

5.4.3.11. Area 110. Course and Estimated Time of Arrival (ETA) Tolerance (QUAL).

5.4.3.11.1. Q. Remained within 5nm of course centerline, or within tolerances specified for Required Navigation Performance airspace (if applicable), whichever is less. ETA/Revised ETA (RETA) were within 2 minutes of actual times of arrival (ATA).

5.4.3.11.2. Q-. Remained within 10nm of course centerline. ETAs/RETAs were within 3 minutes of ATA.

5.4.3.11.3. U. Exceeded "Q-" criteria and/or evaluator had to alter aircraft heading to remain within course tolerance, clear special use airspace, or correctly deviate around weather.

5.4.3.12. Area 111. Fuel Management (QUAL).

5.4.3.12.1. Q. Maintained fuel management IAW directives. Kept the Pilot advised and monitored fuel status.

5.4.3.12.2. Q-. Adequate fuel management with minor computation errors noted. Did not adequately update the Pilot on fuel status.

5.4.3.12.3. U. Failed to demonstrate an understanding of fuel management procedures. Fuel computations not accomplished or contained significant errors. Failed to inform the Pilot of the fuel status.

5.4.3.13. Area 112. Air-to-Air Refueling Procedures (QUAL).

5.4.3.13.1. Q. Effectively accomplished rendezvous and air refueling procedures. Planned optimum use of all available rendezvous aids. Thorough and complete knowledge of in-flight air refueling procedures.

5.4.3.13.2. Q-. Overlooked use of some rendezvous aids, resulting in a delayed or inefficient rendezvous. Knowledge was sufficient to accomplish rendezvous and air refueling.

5.4.3.13.3. U. Displayed lack of knowledge or familiarity with the checklist, equipment, and procedures. Limited use of rendezvous aids adversely affected the rendezvous.

5.4.3.14. Area 113. Briefings (MSN).

5.4.3.14.1. Q. Gave complete, concise mission briefings. Performed thorough and concise briefs in-flight for applicable mission changes.

5.4.3.14.2. Q-. Minor errors and omissions of briefing items that did not adversely affect mission accomplishment.

5.4.3.14.3. U. Major errors or omissions in briefing that resulted in loss of crew situational awareness and performance that had a major negative effect on mission accomplishment.

5.4.3.15. Area 114. Defensive Systems/Tactics/Threat Analysis/Avoidance (MSN).

5.4.3.15.1. Q. Had thorough knowledge of necessary defensive systems/tactics applicable to the mission. Applied appropriate tactics to avoid the threat and minimize exposure. Made timely and appropriate inputs to crew during mission. Able to plot threats in-flight, and formulate a plan of action to avoid a given threat.

5.4.3.15.2. Q-. Limited knowledge of defensive systems. Minor errors in tactics selection. Was unfamiliar with the appropriate tactic for a given scenario. Did not make timely inputs to crew during mission. Made minor errors in plotting and avoiding a given threat.

5.4.3.15.3. U. Knowledge of defensive systems was unsatisfactory. Inputs were missing or inaccurate. Major errors in tactics selection would have resulted in an unsuccessful mission. Was unable to plot and avoid a given threat. Failed to ensure mission effectiveness by not adequately analyzing or degrading threat(s).

5.4.3.16. Area 115. Fire Control Systems and Displays/Sensor Systems/Weapons Systems (MSN).

5.4.3.16.1. Q. Had a thorough knowledge of onboard Fire Control Systems/Sensor Systems/Weapons systems. Effectively used all systems to direct weapons delivery/navigation. Effectively interpreted sensor data/markings devices. Understood how each component incorporated within the Fire Control System.

5.4.3.16.2. Q-. Had only a basic knowledge of onboard Fire Control Systems/Sensor Systems/Weapons Systems. Made minor errors operation/interpretation of Fire Control System data. Made minor errors in interpretation of sensor data/markings devices. More selective interpretation could have increased system effectiveness.

5.4.3.16.3. U. Displayed inadequate knowledge of onboard Fire Control Systems/Sensor Systems/Weapons Systems. Improper operation procedures could have resulted in damage to equipment or negatively affected mission accomplishment. Unable to effectively interpret sensor data/markings devices.

5.4.3.17. Area 116. Employment Tactics (MSN).

5.4.3.17.1. Q. Thorough coordination with crew and LNO to develop a comprehensive offensive employment plan and apply it during the mission. Knowledgeable of appropriate publications, manuals, TOs, AFI, Order of Battle, ROE, Special Instructions, Joint Technical Coordinating Group for Munitions Effectiveness (JTTCG/ME), and ATO. Demonstrated the ability to conduct (as required by mission profile) preplanned/on call close air support (CAS), air interdiction, reconnaissance, fixed-or rotary-wing integration, armed escort, and force protection measures. Effectively conducted combat/peacetime calls-for-fire IAW AFMAN 11-2AC-130J Vol 3.

5.4.3.17.2. Q-. Basic coordination with crew and LNOs to develop an offensive employment plan with minor errors and/or omissions, but did not adversely affect mission accomplishment. Had some difficulty with finding relevant employment data from appropriate publications. Minor errors and/or omissions in CAS/air interdiction/reconnaissance/integration/armed escort/force protection that did not prevent mission success or contribute to mission failure. Minor errors in combat/peacetime calls-for-fire terminology or procedures that did not prevent mission success or jeopardize safety of aircrew or ground personnel.

5.4.3.17.3. U. Did not understand or failed to coordinate an offensive employment plan. Could not identify or find employment guidance in appropriate publications. Failed to conduct CAS/air interdiction/reconnaissance/integration/armed escort/force protection during the mission that resulted negatively on mission accomplishment, or contributed to mission failure. Errors in combat/peacetime calls-for-fire procedures or terminology which prevented mission success or otherwise jeopardized safety of aircrew or ground personnel.

5.4.3.18. Area 117. Communication Procedures/Radio Transmission – Usage and Discipline (MSN).

5.4.3.18.1. Q. Complete knowledge of and compliance with communications procedures. Internal and external communications were concise, accurate, and effectively used to direct actions by the crew to update appropriate agencies of the tactical situation.

- 5.4.3.18.2. Q-. Minor terminology errors or omissions occurred but did not significantly detract from situational awareness, threat warning, or mission accomplishment. Extraneous comments over primary and secondary radios presented minor distractions.
- 5.4.3.18.3. U. Unsatisfactory knowledge of/or failure to comply with communications procedures. Radio communications over primary/secondary radios were inadequate or excessive. Inaccurate or confusing terminology significantly detracted from situational awareness, threat warning, or mission accomplishment.
- 5.4.3.19. Area 118. Target Acquisition/Confirmation (MSN).
- 5.4.3.19.1. Q. Demonstrated ability to accurately identify targets and analyze aircraft position based on these targets. Quickly and accurately confirmed targets for engagement.
- 5.4.3.19.2. Q-. Ability to accurately identify targets was slow and was unsure of aircraft position. Slow to confirm targets for engagement. Minor errors and omissions did not adversely affect target acquisition or confirmation.
- 5.4.3.19.3. U. Could not identify or identified the wrong target. Did not know aircraft position in relation to targets. Failed to confirm target, had to be repeatedly prompted to confirm, or confirmed the wrong target.
- 5.4.3.20. Area 119. Reconnaissance/Search (MSN).
- 5.4.3.20.1. Q. Thorough knowledge of various methods used for searching. Provided accurate visual picture and situational awareness of ground terrain and movement. Proper use of sensors and aircraft position to complete search tasking.
- 5.4.3.20.2. Q-. Adequate knowledge of searching methods. A better choice of techniques, interpretation or sensor usage, could have improved accuracy and speed.
- 5.4.3.20.3. U. Unable to apply search methods to complete search tasking. Unsatisfactory knowledge of search techniques, interpretation and sensor usage.
- 5.4.3.21. Area 120. Degraded Operations (MSN).
- 5.4.3.21.1. Q. Thorough understanding of impacts of degraded operations and how to compensate for degraded equipment to achieve mission accomplishment. Displayed awareness of operational restrictions associated with degraded systems.
- 5.4.3.21.2. Q-. Adequate knowledge of impacts and compensation for degraded operation. Minor errors/omissions that did not adversely affect mission accomplishment.
- 5.4.3.21.3. U. Unsatisfactory knowledge of degraded operations, restrictions, and/or compensation that adversely affected mission accomplishment.
- 5.4.3.22. Area 121. CSO-Directed Tactical Recovery Procedures (MSN).
- 5.4.3.22.1. Q. Complied with all procedures IAW the flight manual and AFMAN 11-2AC-130J Vol 3. Successfully directed the aircraft to a position where a safe landing could be made. Used proper terminology; instructions were clear and concise during the entire approach.

- 5.4.3.22.2. Q-. Briefing was incomplete or deviated from established procedures. Required excessive course corrections on final approach, but directed the aircraft to a point where a safe landing could be made.
- 5.4.3.22.3. U. Had unsatisfactory knowledge of recovery procedures. Unable to direct the aircraft to a point from which a safe landing could be made.
- 5.4.3.23. Area 122. Weapons Employment (MSN).
 - 5.4.3.23.1. Q. Thorough understanding of all weapons (PGM/gun).
 - 5.4.3.23.2. Q-. Demonstrated some knowledge of weapons.
 - 5.4.3.23.3. U. Displayed a lack of understanding of weapons.
- 5.4.3.24. Areas 123. Time To Navigational Point/Fix.
 - 5.4.3.24.1. Q. +/- 30 Seconds
 - 5.4.3.24.2. Q-. +/- 60 Seconds
 - 5.4.3.24.3. U. Exceeded Q- criteria.
- 5.4.3.25. Area 124. Time to Weapons Impact (PGM)
 - 5.4.3.25.1. Q. +/- 30 Seconds
 - 5.4.3.25.2. Q-. +/- 60 Seconds
 - 5.4.3.25.3. U. Excess of +/- 60 Seconds
- 5.4.3.26. Area 125. Local Range/Aerodrome Procedures and Restrictions.
 - 5.4.3.26.1. Q. Complete knowledge of local ranges/aerodrome procedures and restrictions. Complied, advised, and coordinated all local range, special use airspace and airfield requirements during flight.
 - 5.4.3.26.2. Q-. Limited knowledge of local ranges/aerodrome procedures and restrictions. Minor errors and omissions that did not jeopardize flight safety. Slow to advise, coordinate or comply with in-flight local range/aerodrome requirements.
 - 5.4.3.26.3. U. Unfamiliar with local range, aerodrome procedures and restrictions. Unable to comply, coordinate, or advise with local range and airfield procedures.
- 5.4.3.27. Area 126. PSP Mission Management.
 - 5.4.3.27.1. Q. Efficiently directed mission taskings and provided fire control direction and CRM between all crewmembers while effectively utilizing equipment associated with mission operator's pallet, CSO station, and flight deck to ultimately lead to successful mission accomplishment and safe employment.
 - 5.4.3.27.2. Q-. Lack of direction led to minor delays in employment and/or tasking's that did not affect overall mission accomplishment or jeopardized flight safety.
 - 5.4.3.27.3. U. Failed direction of Mission Operator Pallet assets/sensor operator led to failed employment/mission tasking and overall mission failure and/or jeopardized flight safety.
- 5.4.3.28. Areas 127 - 149. Reserved for Future Use.

5.4.3.29. **(Added-AETC)** Area 220. Tweak Procedures.

5.4.3.29.1. **(Added-AETC)** Q. Effectively performed freeze, manual, and/or combat tweaks of the 30mm and/or 105mm guns IAW applicable TOs and instructions. Demonstrated a thorough knowledge of tweak procedures including accurate target elevation and wind updates. Tweak results were within 3 mR of target based on smooth air criteria.

5.4.3.29.2. **(Added-AETC)** Q-. Minor deviations of tweak procedures and mission computer inputs resulting in tweak errors from 3 to 5 mR.

5.4.3.29.3. **(Added-AETC)** U. Demonstrated unsatisfactory knowledge and performance of tweak procedures. Input erroneous or invalid values. Results exceeded Q- criteria.

5.4.3.30. **(Added-AETC)** Area 221. Strike Procedures (PGM).

5.4.3.30.1. **(Added-AETC)** Q. Performed PGM employment utilizing the AC-130 systems and tactical crew coordination to achieve intended munition effects. Laser Precision Guided Munition (LPGM): held the laser spot on the target (dynamic or static) in an efficient manner that achieved desired weapons effects. Demonstrated thorough knowledge of weapons settings and limitations when weaponeering for single, ripple, and multi weapons engagement.

5.4.3.30.2. **(Added-AETC)** Q-. Performed PGM employment utilizing the AC-130 systems and tactical crew coordination to achieve intended munition effects but with minor errors and/or mission delays. (LPGM) Held the laser spot on a dynamic or static target in a manner that caused minor degradation in weapons accuracy (evaluator discretion). Demonstrated limited knowledge of weapons settings and limitations when weaponeering for single, ripple, and multi weapons engagement that did not jeopardize mission accomplishment and/or flight safety.

5.4.3.30.3. **(Added-AETC)** U. Failed to perform PGM employment utilizing the AC-130 systems and tactical crew coordination to achieve intended munition effects and jeopardized mission accomplishment and/or flight safety. Due to the examinee's lack of knowledge of weapons settings and limitations when weaponeering for single, ripple, and multi weapons engagement, mission accomplishment and/or flight safety was jeopardized.

5.4.3.31. **(Added-AETC)** Area 222. Strike Procedures (Gun).

5.4.3.31.1. **(Added-AETC)** Q. Performed successful gun engagements with (to include dual target attack) 105mm and/or 30mm systems as required by applicable TOs and instructions.

5.4.3.31.2. **(Added-AETC)** Q-. Performed gun engagements (to include dual target attack) with 105mm and/or 30mm as required by applicable TOs and instructions with minor errors and not to the desired level of proficiency and or speed. Mission accomplishment not significantly affected and flight safety not jeopardized.

5.4.3.31.3. **(Added-AETC)** U. Failed to perform gun engagements (to include dual target attack) with 105mm and/or 30mm systems as required by applicable TOs and

instructions. Mission accomplishment was significantly affected and/or flight safety was jeopardized.

5.4.3.32. **(Added-AETC)** Area 223. Close Air Support/Troops in Contact.

5.4.3.32.1. **(Added-AETC)** Q. Demonstrated effective/timely knowledge and performance of CAS/TIC procedures. Used range/bearing, laser, sparkle, marking devices, and/or incoming radio traffic to determine the position of friendly forces versus target location(s). Performed all manual offsets in a timely and accurate manner in order to locate the required targets/friendly forces. Coordinated with crewmembers to ensure timely and accurate firepower to support friendly units or TIC.

5.4.3.32.2. **(Added-AETC)** Q-. Demonstrated CAS/TIC procedures, but not to the desired levels of knowledge and performance. Used range/bearing, laser sparkle, marking devices, and/or incoming radio, to determine the position of friendly forces versus target locations(s), but not to the desired levels of proficiency and/or desired speed. Performed manual offsets to locate targets/friendly forces, but not to the desired levels of proficiency and/or desired speed. Crew coordination was not as timely as desired but did not significantly delay mission and/or support to friendly units or TIC. Flight safety or the safety of ground parties was not jeopardized.

5.4.3.32.3. **(Added-AETC)** U. Failed to successfully perform CAS tasking. Misidentified or failed to locate friendly forces and/or enemy forces. Failed to follow AFMAN 11-2AC-130J, Volume 3, *AC-130J Operations Procedures*, “Danger Close” guidance. Engaged wrong target and/or friendly positions. Lack of knowledge and/or performance resulted in delayed fire support to such an extent that fire support did not achieve mission objective. Flight safety or the safety of ground parties was jeopardized.

5.4.3.33. **(Added-AETC)** Area 224. Force Protection.

5.4.3.33.1. **(Added-AETC)** Q. Thorough knowledge of airbase defense, facility defense, fighter/helicopter escort. Ability to plan, coordinate, and reference appropriate publications on force protection.

5.4.3.33.2. **(Added-AETC)** Q-. Minor errors and/or omissions in force protection procedures or knowledge of operations that did not adversely affect mission accomplishment.

5.4.3.33.3. **(Added-AETC)** U. Unfamiliar with force protection planning or execution. Errors and omissions resulted in mission failure.

5.4.3.34. **(Added-AETC)** Area 225. Tactical Navigation.

5.4.3.34.1. **(Added-AETC)** Q. Directed the airplane in the tactical environment utilizing all available resources to achieve mission accomplishment. Thorough knowledge of aircraft guidance/position utilizing sensors/weapon system components.

5.4.3.34.2. **(Added-AETC)** Q-. Adequate knowledge of aircraft guidance/position utilizing sensors/navigation systems. Minor errors or omissions delay the mission and/or did not jeopardize flight safety.

5.4.3.34.3. (Added-AETC) U. Improper use and knowledge of sensors/ weapon system components led to deviations of direction that jeopardized mission accomplishment and/or flight safety.

Chapter 6

WEAPON SYSTEM OPERATOR (WSO)/SENSOR OPERATOR (SO) EVALUATIONS

6.1. General. The criteria contained here and in [Chapter 2](#) apply to all WSO/ flight evaluations. (T-2)

6.2. Performing Evaluator Duties. Evaluators may only administer evaluations in their aircrew specialty for QUAL/MSN evaluations. Evaluator WSOs may only evaluate WSOs. Evaluator SO's may only evaluate SO's.

6.3. Requirements. Refer to [Chapter 2](#) for all evaluations. Instructors will demonstrate instructor duties on all evaluations; refer to [Chapter 3](#) for instructor evaluation grading areas and criteria. WSO/SO specific areas are listed in this chapter.

6.3.1. Initial and Requalification Mission Evaluation. Evaluation will include all areas in [Chapter 2](#), [Chapter 3](#) (if applicable), and [Table 6.1](#). Administer the evaluation during a mission consisting of a live and dry fire. The dry fire portion of the mission will include a scenario with a minimum of one PGM engagement. (T-2)

6.3.2. WSO/SO Periodic Evaluations. Periodic QUAL/MSN evaluations will include all areas in [Chapter 2](#), [Chapter 3](#) (if applicable), and [Table 6.1](#). Live and dry fire procedures will be evaluated on all periodic evaluations. (T-2)

6.3.3. (Added-AETC) WSO QUAL evaluation includes completion of AC-130J CSO/WSO QUAL/MSN open book and CSO/WSO QUAL/MSN closed book exams, boldface, and EPE requisites, evaluation of applicable areas listed in [Table 2.1](#), all areas marked with note 5 in [Table 6.1](#), and all areas marked with an "X" in the QUAL column of [Table 6.2](#).

6.3.4. (Added-AETC) WSO MSN evaluation includes completion of AC-130J CSO/WSO QUAL/MSN open book and CSO/WSO QUAL/MSN closed book exams, evaluation of applicable areas listed in [Table 2.1](#), all areas marked with note 6 in [Table 6.1](#), and all areas marked with an "X" in the MSN column of [Table 6.2](#).

6.4. Grading Criteria.

6.4.1. Areas 1 through 19: Use general grading criteria in [Chapter 2](#) of this volume.

6.4.2. Areas 20 through 29: Use instructor evaluation grading criteria in [Chapter 3](#) of this volume (if applicable).

Table 6.1. WSO/SO Grading Areas.

Area	Notes	Area Name
150	3	System(s) Knowledge
151	1	System(s) Operation
152	1	Target Acquisition, Identification, and Reacquisition
153	1	Tweak Procedures
154	1	Strike Procedures (PGM).
155	1	Strike Procedures (Gun).
156	1	Close Air Support/ Troops in Contact
157	2	Tactical Navigation
158	2	Reconnaissance/Search.
159	2	Force Protection
160	2	Degraded Procedures
161	2	Communication Procedures/Radio Transmission
162	3, 4	Local Range/Aerodrome Procedures and Restrictions
163	3, 4	Defensive Procedures
164	1	Mission Management
165-199		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. Required in-flight for initial qualification evaluations.		

Table 6.1. (AETC) WSO/SO Grading Areas.

Area	Notes	Area Name
150	3, 5, 6	System(s) Knowledge
151	1, 5, 6	System(s) Operation
152	1, 6	Target Acquisition, Identification, and Reacquisition
153	1, 6	Tweak Procedures
154	1, 6	Strike Procedures (PGM)
155	1, 6	Strike Procedures (Gun)
156	1, 6	Close Air Support/ Troops in Contact
157	2, 6	Tactical Navigation
158	2, 6	Reconnaissance/Search
159	2, 6	Force Protection
160	2, 6	Degraded Procedures
161	2, 5, 6	Communication Procedures/Radio Transmission
162	3, 4, 5, 6	Local Range/Aerodrome Procedures and Restrictions
163	3, 4, 6	Defensive Procedures
164	1, 4, 5, 6	Mission Management
165-199		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. Required in-flight for initial qualification evaluations. 4. (AETC) Required in-flight for INIT and RQ evaluations. May be conducted in a simulator certified for this event for periodic and SPOT evaluations. 5. (Added) Required for QUAL evaluation. 6. (Added) Required for MSN evaluation.		

Table 6.2. (Added-AETC) AETC WSO Grading Areas.

Area	Notes	Area Name	QUAL	MSN
200	1	Departure	X	
201	1	Approach/Landing	X	
202	1	Flight Plan/Charts	X	
203	1	Fuel Planning	X	
204	1	Navigation Procedures	X	
205	1	Radio Navigation	X	
206	1	Radar Navigation/Weather Avoidance	X	
207	1	Navigation & Avionics Systems	X	
208	1	AAR Systems/Procedures		X
209	2	Dead Reckoning (DR)/Rating of Navigational Computers	X	
210	1	Course & Estimated Time of Arrival (ETA) Tolerance	X	
211	1	Fuel Management	X	
212	1	Briefings		X
213	1	CSO-Directed Tactical Recovery Procedures		X
214	1	Weapons Employment		X
215	1	Time to Navigational Point/Fix		X
216	1	Time to Weapons Impact (PGM)		X
217	3	Precision Strike Package (PSP) Mission Management		X
218	1	Fire Control Systems & Displays/Sensor Systems/Weapons Systems		X
219	1	Employment Tactics		X

Notes:

1. Required in-flight or simulator certified for this event.
2. Required in-flight or alternate method.
3. Required in-flight for initial qualification evaluations.

6.4.3. Areas 150 through 199: The following subparagraphs contain the evaluation grading criteria for the areas listed in [Table 6.1](#).

6.4.3.1. Area 150. System(s) Knowledge.

6.4.3.1.1. Q. Had a thorough knowledge of onboard aircraft systems, Precision Strike Package systems, Fire Control Systems, and other systems/equipment associated with the WSO crew position.

6.4.3.1.2. Q-. Displayed limited knowledge of aircraft systems, Precision Strike Package systems, Fire Control Systems, and other systems/equipment associated with the WSO crew position.

6.4.3.1.3. U. Displayed inadequate knowledge of aircraft systems, Precision Strike Package systems, Fire Control Systems, and other systems/equipment associated with the WSO crew position.

6.4.3.2. Area 151. System(s) Operation.

6.4.3.2.1. Q. Demonstrated competent operation of aircraft systems, Precision Strike Package systems, Fire Control Systems, and other systems/equipment associated with the WSO crew position IAW TOs and instructions.

6.4.3.2.2. Q-. Demonstrated partial proficiency that did not jeopardize mission accomplishment or flight safety while operating the aircraft systems, Precision Strike Package systems, Fire Control Systems, and other systems/equipment associated with the WSO crew position.

6.4.3.2.3. U. Demonstrated unsatisfactory proficiency with the aircraft systems, Precision Strike Package systems, Fire Control Systems, and other systems/equipment associated with the WSO crew position.

6.4.3.3. Area 152. Target Acquisition, Identification, and Reacquisition.

6.4.3.3.1. Q. Using all means available demonstrated the ability to acquire and identify targets/confirmation points (minimum target size = 2 Milliradian (mR) ± 1 mR) prior to the aircraft attaining the tangent of the attack circle (rolling-in) and/or firing geometry. Performed reacquisition of previously identified targets/confirmation points as required by mission needs without delaying mission accomplishment or jeopardizing flight safety.

6.4.3.3.2. Q-. Minor difficulty acquiring and identifying targets/confirmation points (minimum target size = 2 mR ± 1 mR) prior to the aircraft attaining the tangent of the attack circle (rolling-in) and/or firing geometry. Performed reacquisition of previously identified targets/confirmation points as required by mission needs, but not to the desired levels of speed and proficiency. Mission accomplishment and flight safety not jeopardized.

6.4.3.3.3. U. Examinee failed to acquire and/or identify targets/confirmation points (minimum target size = 2 mR ± 1 mR) prior to the aircraft attaining the tangent of the attack circle (rolling-in) and/or firing geometry. Examinee failed to reacquire previously identified targets/confirmation points as required by mission needs. Caused significant mission delays and/or jeopardized flight safety.

6.4.3.4. Area 153. Tweak Procedures.

6.4.3.4.1. Q. Effectively performed freeze, manual, and/or combat tweaks of the 30mm and/or 105mm guns IAW applicable TOs and instructions. Demonstrated a

thorough knowledge of tweak procedures including accurate target elevation and wind updates. Tweak results were within 3 mR of target based on smooth air criteria.

6.4.3.4.2. Q-. Minor deviations of tweak procedures and mission computer inputs resulting in tweak errors from 3 to 5 mR.

6.4.3.4.3. U. Demonstrated unsatisfactory knowledge and performance of tweak procedures. Input erroneous or invalid values. Results exceeded Q- criteria.

6.4.3.5. Area 154. Strike Procedures (PGM).

6.4.3.5.1. Q. Perform PGM employment utilizing the AC-130 systems and tactical crew coordination to achieve intended munition effects. Laser Precision Guided Munition (LPGM). Held the laser spot on the target (dynamic or static) in an efficient manner that achieved desired weapons effects. Demonstrated thorough knowledge of weapons settings and limitations when weaponeering for single, ripple, and multi weapons engagement.

6.4.3.5.2. Q-. Perform PGM employment utilizing the AC-130 systems and tactical crew coordination to achieve intended munition effects but with minor errors and/or mission delays. (LPGM) Held the laser spot on a dynamic or static target in a manner that caused minor degradation in weapons accuracy (evaluator discretion). Demonstrated limited knowledge of weapons settings and limitations when weaponeering for single, ripple, and multi weapons engagement that did not jeopardize mission accomplishment and/or flight safety.

6.4.3.5.3. U. Failed to perform PGM employment utilizing the AC-130 systems and tactical crew coordination to achieve intended munition effects and jeopardized mission accomplishment and/or flight safety. Due to the examinee's lack of knowledge of weapons settings and limitations when weaponeering for single, ripple, and multi weapons engagement mission accomplishment and/or flight safety was jeopardized.

6.4.3.6. Area 155. Strike Procedures (Gun).

6.4.3.6.1. Q. Performed successful gun engagements with (to include duel target attack) 105mm and/or 30mm systems as required by applicable TOs and instructions.

6.4.3.6.2. Q-. Performed gun engagements (to include duel target attack) with 105mm and/or 30mm as required by applicable TOs and instructions with minor errors and not to the desired level of proficiency and or speed. Mission accomplishment not significantly affected and flight safety not jeopardized.

6.4.3.6.3. U. Failed to perform gun engagements (to include duel target attack) with 105mm and/or 30mm systems as required by applicable TOs and instructions. Mission accomplishment was significantly affected and/or flight safety was jeopardized.

6.4.3.7. Area 156. Close Air Support/Troops in Contact.

6.4.3.7.1. Q. Demonstrated effective/timely knowledge and performance of CAS/TIC procedures. Used range/bearing, laser, sparkle, marking devices, and/or incoming radio traffic to determine the position of friendly forces versus target location(s). Performed all manual offsets in a timely and accurate manner in order to locate the

required targets/friendly forces. Coordinated with crewmembers to ensure timely and accurate firepower to support friendly units or TIC.

6.4.3.7.2. Q-. Demonstrated CAS/TIC procedures, but not to the desired levels of knowledge and performance. Used range/bearing, laser sparkle, marking devices, and/or incoming radio, to determine the position of friendly forces versus target locations(s), but not to the desired levels of proficiency and/or desired speed. Performed manual offsets to locate targets/friendly forces, but not to the desired levels of proficiency and/or desired speed. Crew coordination was not as timely as desired but did not significantly delay mission and/or support to friendly units or TIC. Flight safety or the safety of ground parties was not jeopardized.

6.4.3.7.3. U. Failed to successfully perform CAS tasking. Misidentified or failed to locate friendly forces and/or enemy forces. Failed to follow AFMAN 11-2AC-130J V3 "Danger Close" guidance. Engaged wrong target and/or friendly positions. Lack of knowledge and/or performance resulted in delayed fire support to such an extent, that fire support did not achieve mission objective. Flight safety or the safety of ground parties was jeopardized.

6.4.3.8. Area 157. Tactical Navigation.

6.4.3.8.1. Q. Directed the airplane in the tactical environment utilizing all available resources to achieve mission accomplishment. Thorough knowledge of aircraft guidance/position utilizing sensors/ weapon system components.

6.4.3.8.2. Q-. Adequate knowledge of aircraft guidance/position utilizing sensors/navigation systems. Minor errors or omissions delay the mission and/or did not jeopardize flight safety.

6.4.3.8.3. U. Improper use and knowledge of sensors/ weapon system components led to deviations of direction that jeopardized mission accomplishment and/or flight safety.

6.4.3.9. Area 158. Reconnaissance/Search.

6.4.3.9.1. Q. Performed the tasks associated with locating and attacking targets of opportunity along lines of communication (LOCs), using appropriate search methods/guidance techniques.

6.4.3.9.2. Q-. Performed the tasks associated with locating and attacking targets of opportunity along LOCs, but not to desired levels of proficiency and/or desired speeds. Maintained the aircraft in a favorable position to fire most of the time/did not always position the aircraft to facilitate either reconnaissance or movement from point-to-point in an expeditious manner. Mission accomplishment was not significantly affected and/or flight safety was not jeopardized.

6.4.3.9.3. U. Examinee failed to perform the tasks associated with locating and attacking targets of opportunity along LOCs. Mission accomplishment was significantly affected and/or flight safety was jeopardized.

6.4.3.10. Area 159. Force Protection.

- 6.4.3.10.1. Q. Thorough knowledge of airbase defense, facility defense, fighter/helicopter escort. Ability to plan coordinate and reference appropriate publications on force protection.
- 6.4.3.10.2. Q-. Minor errors and/or omissions in force protection procedures or knowledge of operations that did not adversely affect mission accomplishment.
- 6.4.3.10.3. U. Unfamiliar with force protection planning or execution. Errors and omissions resulted in mission failure.
- 6.4.3.11. Area 160. Degraded Procedures.
- 6.4.3.11.1. Q. Thorough understanding of impacts of degraded operations and how to compensate for degraded equipment to achieve mission accomplishment. Displayed awareness of operations restrictions associated with degraded systems.
- 6.4.3.11.2. Q-. Adequate knowledge of impacts and compensation for degraded operation. Minor errors/omissions that did not adversely affect mission accomplishment.
- 6.4.3.11.3. U. Unsatisfactory knowledge of degraded operations, restrictions, and/or compensation that adversely affected mission accomplishment.
- 6.4.3.12. Area 161. Communication Procedures/Radio Transmission (Mission).
- 6.4.3.12.1. Q. Complete knowledge of and compliance with communications/data link procedures. Capable of loading cryptological codes for secure communications. Voice communications were concise. Internal and external communications/data link operations were accurate and effectively used to direct actions by the crew to update appropriate agencies of the tactical situation.
- 6.4.3.12.2. Q-. Minor terminology errors or omissions occurred but did not significantly detract from situational awareness, threat warning, or mission accomplishment. Extraneous comments over primary and secondary radios presented minor distractions.
- 6.4.3.12.3. U. Unsatisfactory knowledge of/or failure to comply with communications/data link procedures. Unable to load cryptological codes for secure communications due to improper system usage or lack of COMSEC knowledge. Radio communications over primary/secondary radios were inadequate or excessive. Inaccurate or confusing terminology significantly detracted from situational awareness, threat warning, or mission accomplishment.
- 6.4.3.13. Area 162. Local Range/Aerodrome Procedures and Restrictions.
- 6.4.3.13.1. Q. Complete knowledge of local ranges/aerodrome procedures and restrictions. Complied, advised, and coordinated all local range, special use airspace and airfield requirements during flight.
- 6.4.3.13.2. Q-. Limited knowledge of local ranges/aerodrome procedures and restrictions. Minor errors and omissions that did not jeopardize flight safety. Slow to advise, coordinate or comply with in-flight local range/aerodrome requirements.

6.4.3.13.3. U. Unfamiliar with local range, aerodrome procedures and restrictions. Unable to comply, coordinate, or advise with local range and airfield procedures.

6.4.3.14. Area 163. Defensive Procedures.

6.4.3.14.1. Q. Performed and demonstrated knowledge of aircraft defensive systems and specific actions/tactics.

6.4.3.14.2. Q-. Performed and demonstrated knowledge of aircraft defensive systems and specific actions/tactics, but not to the desired levels of proficiency and/or desired speeds with minor errors. Mission accomplishment was not significantly affected and/or flight safety was not jeopardized.

6.4.3.14.3. U. Failed to perform/demonstrate knowledge of aircraft defensive systems and specific actions/tactics. Mission accomplishment was significantly affected and/or flight safety was jeopardized.

6.4.3.15. Area 164. Mission Management.

6.4.3.15.1. Q. Efficiently directed the crew and/or associated assets to accomplish mission taskings while not jeopardizing flight/employment safety.

6.4.3.15.2. Q-. Lack of direction led to minor delays in employment and/or taskings that did not affect overall mission accomplishment or jeopardize flight safety.

6.4.3.15.3. U. Failed direction of crew and/or associated assets operator that led to failed employment/mission tasking and overall mission failure and/or jeopardized flight safety.

6.4.3.16. Areas 165 through 199. Reserved for Future Use.

6.4.4. **(Added-AETC)** AETC AC-130J WSO Grading Criteria.

6.4.4.1. **(Added-AETC)** Area 200. Departure.

6.4.4.1.1. **(Added-AETC) Q.** Monitored headings, airspeeds, altitudes and aircraft position throughout departure. Used an instrument departure procedure and/or appropriate scale departure area chart. Provided headings, ETA, and other required information in a timely manner. Monitored appropriate radios and clearances to ensure crew compliance. Provided updated information when the clearance caused a change in the planned departure. Ensured terrain clearance during departure by use of all available aids and the area chart.

6.4.4.1.2. **(Added-AETC) Q-.** Monitored aircraft position, but slow to provide headings, ETA, or other required information. Performance did not degrade mission accomplishment or compromise flight safety.

6.4.4.1.3. **(Added-AETC) U.** Did not monitor departure headings, airspeeds or altitudes. Unaware of aircraft position and unable to provide updated information when required. Did not use an instrument departure procedure and/or an appropriate scale departure area chart. Allowed major deviations that degraded mission accomplishment or compromised safety. Did not ensure terrain clearance during the departure. No area chart available.

6.4.4.2. **(Added-AETC)** Area 201. Approach/Landing.

- 6.4.4.2.1. **(Added-AETC) Q.** Monitored aircraft position, approach instructions and primary approach navigation aids. Provided headings, ETAs and other information to the P as required. Thoroughly understood approach and missed approach procedures. Ensured terrain clearance during approach by use of all available aids and area chart.
- 6.4.4.2.2. **(Added-AETC) Q-.** Monitored aircraft position but did not fully understand approach instructions/procedures. Slow to provide headings, ETAs or other appropriate information.
- 6.4.4.2.3. **(Added-AETC) U.** Failed to monitor aircraft position. Did not ensure terrain clearance during the approach. Did not use appropriate chart.
- 6.4.4.3. **(Added-AETC) Area 202. Flight Plan/Charts.**
- 6.4.4.3.1. **(Added-AETC) Q.** Completed a flight plan IAW applicable directives. Selected current navigation charts of a proper scale and type of the sortie profile. Charts were constructed IAW current directives. Demonstrated proper manual flight planning procedures, if required.
- 6.4.4.3.2. **(Added-AETC) Q-.** Flight plan/charts contained minor errors or omissions that would not have adversely affected mission accomplishment.
- 6.4.4.3.3. **(Added-AETC) U.** Flight plan not accomplished, incomplete, or contained major errors that adversely affected mission accomplishment. Could not demonstrate manual procedures, or failed to review computer generated flight plan.
- 6.4.4.4. **(Added-AETC) Area 203. Fuel Planning.**
- 6.4.4.4.1. **(Added-AETC) Q.** Completed a fuel plan IAW applicable directives. Used correct entering arguments (examples include temp dev, altitudes, drag index, gross weight, cargo weight) for manual or computer-generated fuel plans. Correctly computed an Equal Time Point (ETP), when required.
- 6.4.4.4.2. **(Added-AETC) Q-.** Fuel plan contained minor errors or omissions that would not have adversely affected mission accomplishment.
- 6.4.4.4.3. **(Added-AETC) U.** Fuel plan not accomplished, incomplete, or contained major errors. ETP not completed or contained major errors or omissions.
- 6.4.4.5. **(Added-AETC) Area 204. Navigation Procedures.**
- 6.4.4.5.1. **(Added-AETC) Q.** Certain of exact aircraft position. Remained within 3nm of course centerline or planned deviation (Exceptions: examples include threat avoidance, weather deviation, Air Traffic Control assigned heading, time control). Thorough knowledge of en route time status in relation to objective area. Complied with all altitude restrictions. Adhered to all airspace restrictions.
- 6.4.4.5.2. **(Added-AETC) Q-.** Uncertain of exact aircraft position due to marginal navigational procedures. Flew 3nm to 5nm from course without the above exceptions. Better awareness of required timing events or en route time status could have avoided excessive, unplanned maneuvering.
- 6.4.4.5.3. **(Added-AETC) U.** Exceeded 5nm during en route navigation without the above exceptions. Was unable to maintain position awareness throughout most of the

route. Unable to accurately assess required timing or unaware of mission time status, jeopardizing mission accomplishment. Violated airspace restrictions. Descended below minimum altitude restrictions.

6.4.4.6. **(Added-AETC)** Area 205. Radio Navigation.

6.4.4.6.1. **(Added-AETC)** Q. Accurately tuned, identified, and interpreted readings of TACANs, VORs or Non-Directional Beacons (NDBs).

6.4.4.6.2. **(Added-AETC)** Q-. Better use of radio aids could have enhanced navigation. Displayed weakness in fixing or plotting procedures.

6.4.4.6.3. **(Added-AETC)** U. Unable to accurately tune and identify radio aids. Did not understand VOR/TACAN/NDB bearing procedures or was unable to obtain position by means of radio aids.

6.4.4.7. **(Added-AETC)** Area 206. Radar Navigation/Weather Avoidance.

6.4.4.7.1. **(Added-AETC)** Q. Demonstrated thorough knowledge and understanding of radar equipment. Used correct procedures for radar operation and weather avoidance procedures. Maintained proper distance from adverse weather.

6.4.4.7.2. **(Added-AETC)** Q-. Demonstrated adequate knowledge of equipment but occasionally used improper operating procedures. Did not update radar/weather analysis while avoiding known weather. Had difficulty identifying radar returns. Weather avoidance was safe with minor deviation from prescribed procedures.

6.4.4.7.3. **(Added-AETC)** U. Displayed unsatisfactory knowledge of radar equipment. Used improper operating procedures that were potentially harmful to system components. Failed to correctly interpret scope returns. Displayed unsatisfactory knowledge of weather avoidance procedures.

6.4.4.8. **(Added-AETC)** Area 207. Navigation & Avionics Systems.

6.4.4.8.1. **(Added-AETC)** Q. Demonstrated a thorough knowledge of onboard navigation system operating procedures. Effectively used navigation systems to direct the aircraft and update system as required.

6.4.4.8.2. **(Added-AETC)** Q-. Demonstrated a basic knowledge of onboard navigation systems and/or avionics systems. Made minor errors in operation/interpretation of navigation system data. More selective updating could have increased system effectiveness.

6.4.4.8.3. **(Added-AETC)** U. Displayed inadequate knowledge of onboard navigation systems procedures. Improper operation procedures could have resulted in damage to equipment or affected mission accomplishment. Failed to update or correctly interpret navigation system data.

6.4.4.9. **(Added-AETC)** Area 208. AAR Systems/Procedures.

6.4.4.9.1. **(Added-AETC)** Q. Effectively accomplished and was fully knowledgeable of air-to-air refueling operations and procedures. Properly completed refueling portion of fuel planning as applicable to the mission. Demonstrated effective/appropriate use of radio communications for briefed emissions control level.

Performed all pre-refueling, refueling, and post-refueling checks in accordance with applicable checklist and directives. Satisfactorily managed/monitored fuel systems and onload distribution in accordance with procedures and techniques outlined in the flight manual, checklist, and other directives. Correctly identified and located system components, explained and related their functions, and specified the limitations. Stated correct system status and its effect on related systems. Recognized malfunctions and applied proper corrective action(s).

6.4.4.9.2. **(Added-AETC)** Q-. Limited knowledge of AAR operations and procedures. Performed prerefueling, refueling, and post-refueling checks with some minor deviations/omissions that did not affect successful accomplishment of air-to-air refueling. Limited management/monitoring of fuel systems and onload distribution in accordance with procedures and techniques outlined in the flight manual, checklist, and other directives. Limited knowledge of identification, location, functions, and limitations of system components. Stated correct system status but could not determine its effect on related systems. Delay in recognizing malfunctions and/or applying proper corrective action(s). Minor errors in the refueling portion of fuel planning as applicable to the mission.

6.4.4.9.3. **(Added-AETC)** U. Displayed lack of knowledge or familiarity with procedures to the extent that AAR was or could have been jeopardized. Failed rendezvous as a result of improper procedures. Inadequate knowledge of fuel system management or exceeded wing fuel balance limitations. Could not identify, locate, or relate systems functions and limitations. Could not determine status of system or its effect on related system. Failed to recognize malfunctions and/ or apply corrective action(s).

6.4.4.10. **(Added-AETC)** Area 209. Dead Reckoning (DR)/Rating of Navigational Computers.

6.4.4.10.1. **(Added-AETC)** Q. Made effective use of DR/Rating of navigational computers during aircraft positioning. Computed or plotted positions within 5nm, selecting the most reliable information.

6.4.4.10.2. **(Added-AETC)** Q-. Occasionally did not identify the navigational computer providing the most reliable information or used improper DR procedures resulting in erroneous ETAs or headings. Computed or plotted position error did not exceed 10nm.

6.4.4.10.3. **(Added-AETC)** U. Was unable to use DR/Rate navigational computers effectively. Computed or plotted position error exceeded Q- criteria.

6.4.4.11. **(Added-AETC)** Area 210. Course & Estimated Time of Arrival (ETA) Tolerance.

6.4.4.11.1. **(Added-AETC)** Q. Remained within 5nm of course centerline, or within tolerances specified for Required Navigation Performance airspace (if applicable), whichever is less. ETA/Revised ETA (RETA) were within 2 minutes of actual times of arrival (ATA).

6.4.4.11.2. **(Added-AETC)** Q-. Remained within 10nm of course centerline. ETAs/RETAs were within 3 minutes of ATA.

6.4.4.11.3. **(Added-AETC)** U. Exceeded Q- criteria and/or evaluator had to alter aircraft heading to remain within course tolerance, clear special use airspace, or correctly deviate around weather.

6.4.4.12. **(Added-AETC)** Area 211. Fuel Management.

6.4.4.12.1. **(Added-AETC)** Q. Maintained fuel management IAW directives. Kept the Pilot advised and monitored fuel status.

6.4.4.12.2. **(Added-AETC)** Q-. Adequate fuel management with minor computation errors noted. Did not adequately update the Pilot on fuel status.

6.4.4.12.3. **(Added-AETC)** U. Failed to demonstrate an understanding of fuel management procedures. Fuel computations were not accomplished or contained significant errors. Failed to inform the Pilot of the fuel status.

6.4.4.13. **(Added-AETC)** Area 212. Briefings.

6.4.4.13.1. **(Added-AETC)** Q. Gave complete, concise mission briefings. Performed thorough and concise briefs in-flight for applicable mission changes.

6.4.4.13.2. **(Added-AETC)** Q-. Minor errors and omissions of briefing items that did not adversely affect mission accomplishment.

6.4.4.13.3. **(Added-AETC)** U. Major errors or omissions in briefing that resulted in loss of crew situational awareness and performance that had a major negative effect on mission accomplishment.

6.4.4.14. **(Added-AETC)** Area 213. CSO-Directed Tactical Recovery Procedures.

6.4.4.14.1. **(Added-AETC)** Q. Complied with all procedures IAW the flight manual and AFMAN 11- 2AC-130J Volume 3. Successfully directed the aircraft to a position where a safe landing could be made. Used proper terminology; instructions were clear and concise during the entire approach.

6.4.4.14.2. **(Added-AETC)** Q-. Briefing was incomplete or deviated from established procedures. Required excessive course corrections on final approach but directed the aircraft to a point where a safe landing could be made.

6.4.4.14.3. **(Added-AETC)** U. Had unsatisfactory knowledge of recovery procedures. Unable to direct the aircraft to a point from which a safe landing could be made.

6.4.4.15. **(Added-AETC)** Area 214. Weapons Employment.

6.4.4.15.1. **(Added-AETC)** Q. Thorough understanding of all weapons (PGM/gun).

6.4.4.15.2. **(Added-AETC)** Q-. Demonstrated some knowledge of weapons.

6.4.4.15.3. **(Added-AETC)** U. Displayed a lack of understanding of weapons.

6.4.4.16. **(Added-AETC)** Area 215. Time To Navigational Point/Fix.

6.4.4.16.1. **(Added-AETC)** Q. +/- 30 Seconds.

- 6.4.4.16.2. **(Added-AETC)** Q-. +/- 60 Seconds.
- 6.4.4.16.3. **(Added-AETC)** U. Exceeded Q- criteria.
- 6.4.4.17. **(Added-AETC)** Area 216. Time to Weapons Impact (PGM)
 - 6.4.4.17.1. **(Added-AETC)** Q. +/- 30 Seconds.
 - 6.4.4.17.2. **(Added-AETC)** Q-. +/- 60 Seconds.
 - 6.4.4.17.3. **(Added-AETC)** U. Exceeded Q- criteria.
- 6.4.4.18. **(Added-AETC)** Area 217. PSP Mission Management.
 - 6.4.4.18.1. **(Added-AETC)** Q. Efficiently directed mission taskings and provided fire control direction and CRM between all crewmembers while effectively utilizing equipment associated with mission operator's pallet, CSO station, and flight deck to ultimately lead to successful mission accomplishment and safe employment.
 - 6.4.4.18.2. **(Added-AETC)** Q-. Lack of direction led to minor delays in employment and/or taskings that did not affect overall mission accomplishment or jeopardized flight safety.
 - 6.4.4.18.3. **(Added-AETC)** U. Failed direction of Mission Operator Pallet assets/sensor operator led to failed employment/mission tasking and overall mission failure and/or jeopardized flight safety.
- 6.4.4.19. **(Added-AETC)** Area 218. Fire Control Systems & Displays/Sensor Systems/Weapons Systems.
 - 6.4.4.19.1. **(Added-AETC)** Q. Had a thorough knowledge of onboard Fire Control Systems/Sensor Systems/Weapons systems. Effectively used all systems to direct weapons delivery/navigation. Effectively interpreted sensor data/markings devices. Understood how each component incorporated within the Fire Control System.
 - 6.4.4.19.2. **(Added-AETC)** Q-. Had only a basic knowledge of onboard Fire Control Systems/Sensor Systems/Weapons Systems. Made minor errors operation/interpretation of Fire Control System data. Made minor errors in interpretation of sensor data/markings devices. More selective interpretation could have increased system effectiveness.
 - 6.4.4.19.3. **(Added-AETC)** U. Displayed inadequate knowledge of onboard Fire Control Systems/Sensor Systems/Weapons Systems. Improper operation procedures could have resulted in damage to equipment or negatively affected mission accomplishment. Unable to effectively interpret sensor data/markings devices.
- 6.4.4.20. **(Added-AETC)** Area 219. Employment Tactics.
 - 6.4.4.20.1. **(Added-AETC)** Q. Thorough coordination with crew and LNO to develop a comprehensive offensive employment plan and apply it during the mission. Knowledgeable of appropriate publications, manuals, TOs, AFI, Order of Battle, ROE, Special Instructions, Joint Technical Coordinating Group for Munitions Effectiveness (JTCG/ME), and ATO. Demonstrated the ability to conduct (as required by mission profile) preplanned/on call close air support (CAS), air interdiction, reconnaissance, fixed-or rotary-wing integration, armed escort, and force protection measures.

Effectively conducted combat/peacetime calls-for-fire IAW AFMAN 11-2AC-130JV3.

6.4.4.20.2. **(Added-AETC)** Q-. Basic coordination with crew and LNOs to develop an offensive employment plan with minor errors and/or omissions but did not adversely affect mission accomplishment. Had some difficulty with finding relevant employment data from appropriate publications. Minor errors and/or omissions in CAS/air interdiction/reconnaissance/integration/armed escort/force protection that did not prevent mission success or contribute to mission failure. Minor errors in combat/peacetime calls-for-fire terminology or procedures that did not prevent mission success or jeopardize safety of aircrew or ground personnel.

6.4.4.20.3. **(Added-AETC)** U. Did not understand or failed to coordinate an offensive employment plan. Could not identify or find employment guidance in appropriate publications. Failed to conduct CAS/air interdiction/reconnaissance/integration/armed escort/force protection during the mission that resulted negatively on mission accomplishment or contributed to mission failure. Errors in combat/peacetime calls-for-fire procedures or terminology which prevented mission success or otherwise jeopardized safety of aircrew or ground personnel.

Chapter 7

AERIAL GUNNER EVALUATIONS

7.1. General. Aerial Gunners (AG) require a combined qualification (QUAL) and mission (MSN) evaluation. **Exception:** AGs that have received a C-130J Loadmaster qualification and completed the applicable differences training may fly on basic qual sorties performing traditional loadmaster duties (i.e., no dry/live fire) prior to completing a MSN evaluation.

7.2. Requirements. Refer to [Chapter 2](#) for all evaluations. Instructors will demonstrate instructor duties on all evaluations; refer to [Chapter 3](#) for instructor evaluation grading areas and criteria. AG specific areas are listed in this chapter.

7.3. Qualification Evaluations: For qualification evaluations, Qualification open and closed Book examinations (or formal school end of course examinations), Boldface, and an EPE are prerequisites for initial evaluations and requisites for periodic evaluations. The EPE should cover the following areas during a qualification evaluation: Emergency signals, ground emergencies, in-flight emergencies (fuselage fire/smoke and fume elimination, inflight door warning, rapid decompression, cargo door and ramp failure, cargo jettison, bailout procedures); landing emergencies (landing gear retracted, ditching).

7.3. (AETC) Qualification Evaluations. QUAL evaluation includes completion of AC-130J Aerial Gunner QUAL/MSN open book and QUAL/MSN closed book exams, boldface and EPE requisites, evaluation of applicable areas listed in [Table 2.1](#), and all Note 1 areas in [Table 7.1](#).

7.3.1. Initial/Periodic /Requalification. In addition to areas listed in [Table 2.1](#) and [Table 3.1](#), qualification evaluations will include Note 1 areas in [Table 7.1](#).

7.3.2. Required events include a minimum of complete aircraft preflight, completion of the applicable weight and balance forms, a sortie of any type, and a complete postflight.

7.4. Mission Qualification: Mission evaluations may be administered concurrently with qualification evaluations and will include Note 2 areas in [Table 7.1](#). Mission open and closed Book examinations (or formal school end of course examinations) and an EPE are requisites (prerequisites for initial). Mission open and closed book examinations may be combined with qualification examinations. The EPE should cover Guns, Common Launch Tube (CLT), and Small Diameter Bomb malfunction procedures. AAR will be graded if accomplished during evaluation in flight or WST, but is not required for completion of initial/requalification or periodic evaluations.

7.4. (AETC) Mission Qualification. MSN evaluation includes completion of AC-130J Aerial Gunner QUAL/MSN open book and QUAL/MSN closed book exams, evaluation of applicable areas listed in [Table 2.1](#), and the Note 2 areas listed in [Table 7.1](#).

7.4.1. Initial/Requalification. The evaluation profile will include, at a minimum, 30mm and 105mm gun pre-flight, CLT Loading/Unloading procedures, 30mm and 105mm live fire, and an aircraft postflight. Specify in the comments section of the AF Form 8 the mission events that were accomplished. Comply with the following requirements:

7.4.1. (AETC) INIT and RQ candidates will accomplish their QUAL and MSN evaluations, including all requisites, IAW the prescribed AETC syllabus and reference to this supplement for specific AFMAN 11-2AC-130JV2 areas of evaluation on a given flight examination.

7.4.1.1. 30mm/105mm live fire will include accomplishing the Prestrike, intent to fire the weapon, and Poststrike checklists.

7.4.1.2. CLT loading/unloading procedures will include accomplishing the CLT Loading/Unloading checklist. Loading/unloading of an actual/training CLT will be accomplished.

7.4.2. Periodic. If applicable conduct the QUAL/MSN evaluation in the eligibility period corresponding to the earliest expiration date. The evaluation profile will include preflight of 30mm and 105mm and live fire on a minimum on one gun. Specify in the comments section of the AF Form 8 the mission events that were accomplished. Comply with the following requirements:

7.4.2.1. 30mm/105mm live fire will include accomplishing the Prestrike, passed pulse to fire the weapon loaded with live round, and Poststrike checklists.

7.4.2.2. CLT loading/unloading procedures will include accomplishing the CLT Loading/Unloading checklist.

7.4.2.3. For basic QUAL AG attaining MSN qualification, a QUAL evaluation will be conducted in conjunction with the INIT or RQ MSN evaluation if possible.

7.4.3. **(Added-AETC) Table 7.1** area 310 (Air-to-Air Refueling Systems/Procedures) and area 317 (Common Launch Tube Loading/Unloading Procedures) are not annotated by Notes 1 or 2 defining them as either QUAL or MSN events. For the purposes of standardization, AETC AC-130J FEs will consider area 310 and area 317 required MSN evaluation areas and may be evaluated in-flight, in a separate SIM MSN sortie in a simulator/weapons system trainer (WST) certified for this event, or through alternate method.

Table 7.1. Aerial Gunner QUAL/MSN Grading Areas.

Area	Notes	Grading
300	1	Life Support Equipment
301	1	Aircraft Configuration
302	1,3	Weight and Balance
303	1	Tie-down/Restraint
304	1	Aircraft Limitations
305	1	Passenger Handling
306	1	Border Clearance
307	1,3	Scanner Duties
308	1	Engine Running On-load/Off-load
309	2,3	Coordinated Tasks Briefing
310	4	Air-To-Air Refueling Systems/Procedures
311	2	NVG Usage/Limitations
312	2	Pyrotechnics
313	2	Munitions Handling/Up/Download Procedures
314	2,3	Pre-Strike
315	2,3	Post-Strike

316	2,3	Gun Operations
317	4	CLT Loading/Unloading Procedures
318	2	Weapons Malfunctions
319	2	Cryptological Loading of Radios and Weapons
320	1,4	Aircraft Systems Knowledge
321	2,4	Weapon Systems Knowledge
322	2,4	Defensive Systems Knowledge and Threat Reactions
323-399		Reserved for future use

Notes:

1. Required for QUAL portion of flight evaluations.
2. Required for MSN portion of flight evaluations.
3. Must be accomplished in flight or WST certified for event.
4. Required in-flight, WST certified for event or alternate method.

7.5. Grading Criteria. The following subparagraphs contain grading criteria for the areas listed in [Table 7.1.](#)

7.5.1. Area 300. Life Support Equipment.

7.5.1.1. Q. Located, inspected, distributed, and/or demonstrated the proper use of life support or emergency equipment. Satisfactory knowledge of equipment.

7.5.1.2. Q-. Difficulty locating, inspecting, and/or demonstrating the proper use of life support or emergency equipment. Adequate knowledge of equipment, but needs improvement.

7.5.1.3. U. Failed to inspect, distribute, and/or demonstrate the proper use of life support or emergency equipment. Unsatisfactory knowledge of equipment.

7.5.2. Area 301. Aircraft Configuration.

7.5.2.1. Q. Ensured the aircraft 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.

7.5.2.2. Q-. Difficulty configuring the aircraft but did not impede mission. Limited knowledge of various configurations as outlined in applicable directives.

7.5.2.3. U. Failed to ensure proper aircraft configuration or caused mission delays. Had unsatisfactory knowledge of configurations. Failed to properly stow configuration items.

7.5.3. Area 302. Weight and Balance.

7.5.3.1. Q. Knowledge of aircraft limitations and weight and balance directives was satisfactory. Accurately completed Aircraft Weight and Balance with aircraft CNI-MU with only minor errors.

7.5.3.1.1. Takeoff or landing gross weights: +/- 500 lbs.

7.5.3.1.2. Percent of Mean Aerodynamic Chord (MAC): +/- 0.5 percent.

7.5.3.1.3. Aircraft gross takeoff limits: Not exceeded.

7.5.3.1.4. Center of gravity limitations: Not exceeded.

7.5.3.2. Q-. Limited knowledge of aircraft limitations, weight and balance directives. Had difficulty completing Aircraft Weight and Balance with aircraft CNI-MU. Weight and Balance errors within criteria listed below.

7.5.3.2.1. Takeoff or landing gross weights: +/- 501 to 1,000 lbs.

7.5.3.2.2. Percent of MAC: +/- 0.6 to 1.0 percent.

7.5.3.2.3. Aircraft gross takeoff limits: Not exceeded.

7.5.3.2.4. Center of gravity limitations: Not exceeded.

7.5.3.3. U. Knowledge of aircraft limitations and weight and balance directives was inadequate. Failed to complete Aircraft Weight and Balance with aircraft CNI-MU. Exceeded Q- criteria.

7.6. Area 303. Tie-down/Restraint.

7.6.1. Q. Correctly applied correct amount of restraint to a given item. Understood and could state the principals of restraint.

7.6.2. Q-. Difficulty applying the correct amount of restraint. Did not fully understand the principals of restraint.

7.6.3. U. Failed to apply the correct amount of restraint. Did not understand and could not state the principals of restraint.

7.7. Area 304. Aircraft Limitations.

7.7.1. Q. Correctly stated, understood, and could apply the correct limitations associated with the aircraft, on/off-loading, and associated equipment.

7.7.2. Q-. Had difficulty stating various limitations. Had difficulty locating correct limitations in the loading manual.

7.7.3. U. Failed to state various limitations, or could not locate correct limitations in the loading manual.

7.8. Area 305. Passenger Handling.

7.8.1. Q. Correctly briefed and performed passenger handling procedures.

7.8.2. Q-. Had difficulty briefing and/or performing passenger handling procedures.

7.8.3. U. Failed to brief and/or did not perform proper passenger handling procedures.

7.9. Area 306. Border Clearance.

7.9.1. Q. Correctly followed command guidelines. Completed/explained border clearance requirements IAW current directives.

7.9.2. Q-. Difficulty explaining border clearance requirements. Minor mistakes degraded effectiveness.

7.9.3. U. Could not accurately complete forms. Unaware of command guidance, or could not explain requirements.

7.10. Area 307. Scanner Duties.

7.10.1. Q. Periodically performed scanner duties by monitoring aircraft interior and exterior for abnormal conditions.

7.10.2. Q-. Did not scan in a timely manner to recognize abnormal conditions.

7.10.3. U. Failed to perform scanner duties by monitoring or making periodic checks of the aircraft interior and exterior for abnormal conditions.

7.11. Area 308. Engine Running On/Off-load.

7.11.1. Q. Followed/explained proper procedures for engine running on/off-load operations.

7.11.2. Q-. Difficulty following/explaining proper procedures for engine running on/off-load operations.

7.11.3. U. Did not follow/explain proper procedures for engine running on/off-loading.

7.12. Area 309. Coordinated Tasks Briefing.

7.12.1. Q. Correctly briefed the coordinated tasks IAW current directives (if required).

7.12.2. Q-. Had difficulty briefing the coordinated tasks IAW current directives (if required).

7.12.3. U. Failed to accomplish the coordinated tasks briefing IAW current directives (if required).

7.13. Area 310. Air-To-Air Refueling Systems/Procedures.

7.13.1. Q. Effectively accomplished and was fully knowledgeable of air-to-air refueling operations and procedures. Properly completed refueling portion of fuel planning as applicable to the mission. Demonstrated effective/appropriate use of radio communications for briefed emissions control level. Performed all pre-refueling, refueling, and post-refueling checks in accordance with applicable checklist and directives. Satisfactorily managed/monitored fuel systems and onload distribution in accordance with procedures and techniques outlined in the flight manual, checklist, and other directives. Correctly identified and located system components, explained and related their functions, and specified the limitations. Stated correct system status and its effect on related systems. Recognized malfunctions and applied proper corrective action(s).

7.13.2. Q-. Limited knowledge of AAR operations and procedures. Performed pre-refueling, refueling, and post-refueling checks with some minor deviations/omissions that did not affect successful accomplishment of air-to-air refueling. Limited management/monitoring of fuel systems and onload distribution in accordance with procedures and techniques outlined in the flight manual, checklist, and other directives. Limited knowledge of identification, location, functions, and limitations of system components. Stated correct system status, but could not determine its effect on related systems. Delay in recognizing malfunctions and/or applying proper corrective action(s). Minor errors in the refueling portion of fuel planning as applicable to the mission.

7.13.3. U. Displayed lack of knowledge or familiarity with procedures to the extent that AAR was or could have been jeopardized. Failed rendezvous as a result of improper procedures. Inadequate knowledge of fuel system management or exceeded wing fuel balance limitations. Could not identify, locate, or relate systems functions and limitations. Could not determine status of system or its effect on related system. Failed to recognize malfunctions and/or apply corrective action(s).

7.14. Area 311. NVG Usage/Limitations.

7.14.1. Q. Correctly described the use/limitations of NVGs.

7.14.2. Q-. Minor omissions or deviations in describing the use/limitations of NVGs. Did not properly preflight, handle, or use NVGs during the flight, but caused no damage to equipment. Mission success was not negatively affected.

7.14.3. U. Procedures for using NVGs were incorrect. Caused damage to equipment. Mission unsuccessful as a result of improper NVG usage.

7.15. Area 312. Pyrotechnics.

7.15.1. Q. Thorough knowledge of pyrotechnics. Could identify the appropriate pyrotechnics for the mission. Satisfactory knowledge of ground and in-flight emergency procedures.

7.15.2. Q-. Limited knowledge of pyrotechnics. Did not always correctly identify the most efficient pyrotechnics for the mission, but safety was not affected.

7.15.3. U. Lacked knowledge of pyrotechnics. Could not identify appropriate pyrotechnics for the mission. Inadequate knowledge of emergency procedures; compromised safety.

7.16. Area 313. Munitions Handling/Up/Download Procedures.

7.16.1. Q. Followed/explained proper procedures for munitions handling/up/download operations.

7.16.2. Q-. Difficulty following/explaining proper procedures for munitions handling/up/download operations.

7.16.3. U. Did not follow/explain proper procedures for munitions handling/up/download operations.

7.17. Area 314. Pre-strike.

7.17.1. Q. Completed prestrike IAW tech orders, checklists, and instructions. Individual technique complied with established procedures.

7.17.2. Q-. Minor deviations from established prestrike procedures. Individual technique was safe, but detracted from established procedures. Used individual technique instead of established procedure and was unaware of differences.

7.17.3. U. Failed prestrike critical component or could not conduct a satisfactory prestrike. Individual technique was unsafe and/or violated established procedures.

7.18. Area 315. Poststrike.

7.18.1. Q. Completed poststrike IAW tech orders, checklists, and instructions. Individual technique complied with established procedures.

7.18.2. Q-. Minor deviations from established poststrike procedures. Individual technique was safe, but detracted from established procedures. Used individual technique instead of established procedure and was unaware of differences.

7.18.3. U. Failed poststrike critical component or could not conduct a satisfactory poststrike. Individual technique was unsafe and/or violated established procedures.

7.19. Area 316. Gun Operations.

7.19.1. Q. Completed gun operations IAW tech orders, checklists, and instructions. Individual technique complied with established procedures.

7.19.2. Q-. Minor deviations from established gun operations. Individual technique was safe, but detracted from established procedures. Used individual technique instead of established procedure and was unaware of differences.

7.19.3. U. Failed gun operations critical component or could not satisfactorily conduct gun firing operations. Individual technique was unsafe and/or violated established procedures.

7.20. Area 317. CLT Loading/Unloading Procedures.

7.20.1. Q. Properly performed CLT Loading/Unloading procedures in a safe and efficient manner IAW appropriate checklist procedures.

7.20.2. Q-. Displayed some difficulty performing or made minor deviations from CLT Loading/Unloading procedures, but still performed procedures in a safe manner.

7.20.3. U. Unable to perform CLT Loading/Unloading procedures in a safe manner.

7.21. Area 318. Weapons Malfunctions.

7.21.1. Q. Able to identify and can quickly and efficiently clear all weapons malfunctions IAW tech orders, checklist and instructions. Additionally, examinee demonstrates thorough knowledge on all possible causes for malfunctions. Individual technique complied with established procedures.

7.21.2. Q-. Misidentified malfunction(s), but used the correct procedure to clear weapon. Unsure of possible causes. Noncritical steps to clear malfunction performed out of sequence. Individual technique was safe, but detracted from established procedures. Used individual technique instead of established procedure and was unaware of differences.

7.21.3. U. Incorrect procedures used to clear malfunction. Does not know possible causes for malfunctions. Critical steps to clear malfunction performed out of sequence or could not clear malfunction in a satisfactory manner. Individual technique was unsafe and/or violated established procedures.

7.22. Area 319. Cryptologic Loading of Radios and Weapons.

7.22.1. Q. Correctly loads aircraft radios and PGMs with secure codes

7.22.2. Q-. Secure codes loaded to aircraft radios and PGMs with errors

7.22.3. U. Unable to load aircraft radios and PGMs with secure codes.

7.23. Area 320-399. Reserved for future use.**7.24. (Added-AETC) AETC AC-130J Aerial Gunner Grading Criteria.****7.24.1. (Added-AETC) Area 320. Aircraft Systems Knowledge.**

7.24.1.1. **(Added-AETC) Q.** Demonstrated/explained a complete knowledge of aircraft systems operations/limitations and proper procedural use of systems.

7.24.1.2. **(Added-AETC) Q-** Marginal knowledge of aircraft systems operations and limitations in some areas. Used individual technique instead of established procedures and was unaware of differences.

7.24.1.3. **(Added-AETC) U.** Unsatisfactory systems knowledge. Failed to demonstrate/explain the procedures for aircraft system operations.

7.24.2. (Added-AETC) Area 321. Weapon Systems Knowledge.

7.24.2.1. **(Added-AETC) Q.** Demonstrated a thorough knowledge of gun weapon system components, nomenclature, cycle of operations, limitation, and munitions IAW technical orders, checklists, and instructions.

7.24.2.2. **(Added-AETC) Q-** The examinee had difficulty explaining some portions of the gun weapon system components, nomenclature, cycle of operations, limitations, and munitions IAW technical orders, checklists, and instructions.

7.24.2.3. **(Added-AETC) U.** Knowledge of aircraft gun weapon systems was inadequate. Examinee failed to explain gun weapon system components, nomenclature, cycle of operations. Limitations, and munitions IAW technical orders, checklists, and instructions.

7.24.3. (Added-AETC) Area 322. Defensive Systems Knowledge and Threat Reactions.

7.24.3.1. **(Added-AETC) Q.** Had thorough knowledge of necessary aircraft defensive systems/tactics applicable to the mission. Applied appropriate tactics to avoid threats. Made timely input and appropriate inputs to the crew during mission.

7.24.3.2. **(Added-AETC) Q-** Limited knowledge of aircraft defensive systems. Minor errors in defensive systems operations. Was unfamiliar with the appropriate tactic for a given scenario. Did not make timely inputs to crew during mission.

7.24.3.3. **(Added-AETC) U.** Knowledge of aircraft defensive systems was unsatisfactory. Inputs were missing or inaccurate. Major errors in defensive systems operations. Failed to ensure mission effectiveness by not adequately identifying or reacting to threat(s).

Chapter 8

DIRECT SUPPORT OPERATORS

8.1. General. See AFSOCI 11-2DSO, Vol 2, for Direct Support Operator grading criteria.

MARK D. KELLY, Lt Gen, USAF
Deputy Chief of Staff, Operations

(AETC)

CHRISTOPHER R. AMRHEIN, Brig Gen, USAF
Director of Operations and Communications

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

Air Force Instruction (AFI) 11-200 *Aircrew Training, Standardization /Evaluation, and General Operations Structure*, 21 September 2018

AFI 11-202, Vol 2, *Aircrew Standardization and Evaluation Program*, 6 December 2018

AFI 11-202, Vol 2, AFSOC Sup (HOLDOVER), *Aircrew Standardization/Evaluation Program*, 6 December 2018

AFI 11-202, Vol 3, *General Flight Rules*, 2 October 2018

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

AFI 11-290, *Cockpit/Crew Resource Training Program*, 14 June 2018

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

AFMAN 11-2AC-130J Vol 3, *AC-130J General Operations Procedures*, 10 Jan 2019

(Added-AETC) AFMAN 11-202V2_AETCSUP, 1 September 2022

AFMAN 11-217, *Flight Operations*, 10 June 2019

AFMAN 33-363, *Management of Records*, 1 March 2008 Privacy Act (5 U.S.C. § 552a), *US Code Title 5 Section 552*, 1974

(Added-AETC) DoDI 5400.11, *DoD Privacy and Civil Liberties Programs*, 29 January 2019

Prescribed Forms

(Added-AETC) None

Adopted Forms

AF Form 8, *Certificate of Aircrew Qualification*

AF Form 8A, *Certificate of Aircrew Qualification (Multiple Aircraft)*

AF Form 847, *Recommendation for Change of Publication*

(Added-AETC) AF Form 3862, *Flight Evaluation Worksheet*

AF Form 4031, *CRM Skills Criteria Training/ Evaluation*

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

Abbreviations and Acronyms

AF—Air Force

AFE—Aircrew Flight Equipment

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFSOC—Air Force Special Operations Command
AI—Air Interdiction
AG—Aerial Gunner
ARMS—Aviation Resource Management System
AAR—Air-to-Air Refueling
ASR—Airport Surveillance Radar
ATA—Actual Time of Arrival
ATO—Air Tasking Order
BAQ—Basic Aircraft Qualified
CAS—Close Air Support
CLT—Common Launch Tube
CNI-MU—Communication/Navigation/Identification Management Unit
COMSEC—Communications Security
CP—Copilot
CRM—Crew Resource Management
CSO—Combat Systems Operator
DoD—Department of Defense
DR—Dead Reckoning
DSO—Direct Support Operator
ECM—Electronic Countermeasures
EPE—Emergency Procedure Evaluation
ETA—Estimated Time of Arrival
ETP—Equal Time Point
(Added-AETC) FE—Flight Examiner
HQ—Headquarters
IAW—In Accordance With
ILS—Instrument Landing System
INIT—Initial
INSTM—Instrument
IPRA—Integrated Precision Radar Approach
(Added-AETC) IQT—Initial Qualification Training
JTCG/ME—Joint Technical Coordinating Group for Munitions Effectiveness

KIAS—Knots Indicated Airspeed
LNO—Liaison Officer
LOC—Localizer
MAC—Mean Aerodynamic Chord
MAJCOM—Major Command
MAP—Missed Approach Point
MDA—Minimum Descent Altitude
mm—Millimeter
(Added-AETC) MQT—Mission Qualification Training
mR—Milliradian
MSN—Mission
NAVAIDS—Navigational Aids
NDB—Non-Directional Beacon
nm—Nautical Mile
NOTAMS—Notice to Airmen System
NVG—Night Vision Goggle
OPR—Office of Primary Responsibility
OPSEC—Operations Security
P—Pilot
PF—Pilot Flying
PM—Pilot Monitoring
PAR—Precision Approach Radar
PGM—Precision Guided Munitions
QUAL—Qualification
RETA—Revised Estimated Time of Arrival
ROE—Rules of Engagement
RQ—Requalification
SO—Sensor Operator
SPOT—Spot
(Added-AETC) Stan/Eval—Standards and Evaluation
TACAN—Tactical Air Navigation
TIC—Troops in Contact

TO—Technical Order

U—Unqualified or Unsatisfactory

USAF—United States Air Force

VDP—Visual Descent Point

VOR—Omnidirectional Range

WSO—Weapon System Operator

WST—Weapon System Trainer

Office Symbols

(Added-AETC) AETC A3/6—AETC Director of Operations and Communications

(Added-AETC) AETC/A3V—AETC Stan/Eval