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SECRETARY OF THE AIR FORCE**

**AIR FORCE INSTRUCTION 11-2KC-135  
VOLUME 2**



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***Flying Operations***

**KC-135 AIRCREW EVALUATION CRITERIA**

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This instruction implements AFPD 11-2, *Aircraft Rules and Procedures*. It establishes evaluation criteria for the operation of KC-135 aircraft to safely and successfully accomplish their worldwide mobility missions. It is used in conjunction with AFI 11-202V2, *Aircrew Standardization/Evaluation Program*, and the appropriate MAJCOM supplement. This instruction applies to all commanders, operations supervisors, and aircrew assigned or attached to all flying activities of commands operating KC-135 aircraft. This publication is applicable to Air Mobility Command (AMC), Air Force Reserve Command (AFRC), Air National Guard (ANG), Pacific Air Forces (PACAF), United States Air Forces Europe (USAFE), and Air Education and Training Command (AETC) units. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records* and disposed of in accordance with the *Air Force Records Disposition Schedule (RDS)* located at <https://www.my.af.mil/gcss-af61a/afrims/afrims>. This publication requires the collection and or maintenance of information protected by the Privacy Act (PA) of 1974. The authorities to collect and or maintain the records prescribed in this publication are Title 10 *United States Code*, Chapter 857 and Executive Order 9397, *Numbering System for Federal Accounts Relating to Individual Persons*, 30 Nov 1943 as amended by Executive Order 13478, *Amendments to Executive Order 9397 Relating to Federal Agency Use of Social Security Numbers*, November 18, 2008. Forms affected by the PA have an appropriate PA statement. System of records notice F011 AF XO, *Aviation Resource Management System (ARMS)* (December 26, 2002, 67 FR 78777) applies. To recommend changes, conflicts, suggestions, or recommendations use the AF IMT 847 and route it through the publishing channels to the OPR for the publication. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

**SUMMARY OF CHANGES**

This document is substantially revised and must be completely reviewed. This revision defines requirements for pilot instrument and qualification checks with collocated simulator (paragraph 1.4.1), authorizes events accomplished in-flight to meet ATS profile requirements (paragraph 2.1.1), designates OG/CC as waiver authority for ATS usage for checks (paragraph 2.2), moves 40 flap approach from Normal to Partial Flap (paragraph 2.8.1, Area 13, Area 34), clarifies precision approach requirements (paragraph 2.8.1, Area 25), adds GPS option for non-precision approach (paragraph 2.8.1, Area 26), moved Ground Operations/Taxi (Area 30), Takeoff (Area 31), Fuel Conservation (Area 33), and Landings (Area 34) to mission qualification (paragraph 2.8.5), removes all references to E model evaluation requirements and clarifies T-model certification requirements.

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## Chapter 1

### GENERAL INFORMATION

**1.1. General.** This Air Force Instruction (AFI) provides flight examiners and aircrews with procedures and evaluation criteria/tolerances to be used during flight evaluations as specified in AFI 11-202V2, *Aircrew Standardization/Evaluation Program*. Specific areas for evaluation are prescribed to ensure an accurate assessment of the proficiency and capabilities of aircrews. Evaluators use this AFI when conducting aircrew evaluations. Instructors use this AFI when preparing aircrews for qualification.

**1.2. Applicability.** This AFI is applicable to all individuals operating KC-135 aircraft. Copies should be available to all aircrew members.

**1.3. Key Words and Definitions.**

1.3.1. “Will” and “Shall” indicate a mandatory requirement.

1.3.2. “Should” is used to indicate a preferred, but not mandatory, method of accomplishment.

1.3.3. “May” indicates an acceptable or suggested means of accomplishment.

1.3.4. “Note” indicates operating procedures, techniques, etc., which are considered essential to emphasize.

**1.4. Deviations and Waivers.** Do not deviate from the policies and guidance in this AFI, except for safety or when necessary to protect the crew or aircraft from a situation not covered by this AFI and immediate action is required. Report deviations or exceptions without waiver through channels to MAJCOM Standardization/Evaluation function who in turn, notifies HQ AMC/A3V for follow-on action, if necessary.

1.4.1. MAJCOM/A3 is the waiver authority for contents to this document.

1.4.2. MAJCOM/A3s will forward a copy of approved long-term waivers, to this instruction, to HQ AMC/A3VK for follow-on action, if required.

**1.5. Supplements.** This AFI is a basic directive. Each user MAJCOM may supplement this AFI according to AFD 11-2, *Aircraft Rules and Procedures*. MAJCOMs may specify unique evaluation items in their appropriate supplement. Supplements will not be less restrictive than the provisions of this AFI or the appropriate flight manual.

1.5.1. Supplement Coordination Process. Forward MAJCOM/A3 approved supplements, with attached AF Form 673, **Request to Issue Publication**, to lead command (HQ AMC/A3) for review. HQ AMC/A3 will provide a recommendation and forward to HQ USAF/A3O for approval (according to AFD 11-2, *Aircraft Rules and Procedures*). Use the following OPR's address: HQ AMC/A3V, 402 Scott Dr., Unit 3A1, Scott AFB IL, 62225-5302. When supplements are published, provide a final copy to HQ USAF/A3O-AT and HQ AMC/A3V.

1.5.2. If necessary, request and include approved long-term waivers to this AFI (including, approval authority, date, and expiration date) in the appropriate MAJCOM supplement.

1.5.3. Local Supplement Coordination. Units send a copy of the local supplement to HQ AMC/A3V and parent MAJCOM/A3V for coordination and approval. When local supplements are published, notify or send a final copy to HQ AMC/A3V, parent MAJCOM, and appropriate NAF, if applicable.

**1.6. Requisition and Distribution Procedures.** Unit commanders may provide copies for all aircrew members and associated support personnel.

**1.7. Improvement Recommendations.** Send comments and suggested improvements to this instruction on AF Form 847, **Recommendation for Change of Publication**, to the HQ AMC/A3V Community of Practice website. Routing procedures of the AF Form 847 for all Active Duty, Air National Guard and Air Force Reserve Units will be in accordance with (IAW) AFI 11-215, **Flight Manual Procedures**, and MAJCOM supplement and AFI 33-360, **Publications and Forms Management**.

**1.8. Evaluations.** This instruction establishes standardized instrument (INSTM), qualification (QUAL), mission (MSN), SPOT, and instructor (INSTR) evaluation criteria. It also establishes the areas/subareas necessary for the successful completion of evaluations, and which required areas/subareas will be considered critical and/or non-critical.

**1.9. Evaluation Requirements.** Accomplish combined evaluations whenever practical. Crew Resource Management (CRM) skills will be evaluated on all evaluations. KC-135 aircrew members will complete the following evaluations (except SPOT evaluations), at 17-month frequency according to AFI 11-202V2, and the appropriate MAJCOM supplement. Units collocated with a simulator facility will conduct pilot INSTM and QUAL flight evaluations in the simulator. The OG/CC is the waiver authority for conducting INSTM/QUAL evaluations in the aircraft due to simulator availability. Forward approved waivers to AMC/A3VK through AFRC/A3V and NGB/A3O. In addition, document waivers in standardization and evaluation board (SEB) minutes. Units without co-located simulators may elect to send crews to simulator locations to perform INSTM/QUAL evaluations.

1.9.1. Instrument (INSTM) Evaluation. All KC-135 pilots and navigators will successfully complete a periodic instrument evaluation including an open-book, written instrument examination and an instrument simulator or flight evaluation.

1.9.2. Qualification (QUAL) Evaluation. All KC-135 crewmembers will successfully complete a periodic qualification evaluation including the requisite open-book, closed-book and Boldface written examinations, emergency procedures evaluation (EPE), publications check, and a simulator or flight evaluation.

1.9.3. Mission (MSN) Evaluations. The KC-135 primary mission is tanker air to air refueling. See crew position chapters for additional mission evaluations. All KC-135 crewmembers will complete a mission evaluation as required in AFI 11-202 Volume 2 and MAJCOM SUP. Except as noted in the following crew position chapters, all crewmembers will be evaluated in designated areas/subareas required in the performance of a single operational or training sortie to successfully complete the MSN evaluation.

1.9.3.1. All primary crewmembers must be mission qualified in each specific mission prior to performing any maneuvers associated with that mission (example: A receiver air to air refueling qualified aircraft commander will not perform any receiver air to air refueling if the other primary pilot does not have a receiver air to air refueling mission

qualification). Exception: Crewmembers not qualified in the specific mission may perform maneuvers under the supervision of a mission qualified instructor. Refer to AFI 11-2KC-135 Volume 3 to determine whether instructor supervision is required to be direct or indirect for the specific maneuver.

1.9.4. Instructor (INSTR) Evaluations. To initially qualify as an instructor in the KC-135, crewmembers will successfully complete an initial instructor qualification course and evaluation. Subsequently, aircrew members designated as instructors will be evaluated on their ability to instruct during all periodic evaluations. Individuals may accomplish a QUAL, INSTM, or MSN evaluation in conjunction with initial INSTR evaluation if all required items of the respective evaluation are accomplished. Refer to the specific aircrew chapter for requirements.

1.9.5. SPOT Evaluations. A SPOT evaluation is an evaluation not intended to satisfy the requirements of a periodic (e.g., INSTM, QUAL, MSN) evaluation. SPOT evaluations have no specific requisites or requirements unless specified in this AFI or MAJCOM/Unit supplement. See AFI 11-202V2 for options to convert a SPOT evaluation to meet requirements of a periodic evaluation.

1.9.6. Emergency Procedures Evaluations (EPE). See AFI 11-202V2 and the following: Evaluate MSN specific emergency procedures and system knowledge during MSN evaluations. A single EPE may be used for separate evaluations (e.g. a MSN and INSTM/QUAL eval) but the combined EPE must be of a scope and duration to cover required areas and must be within the requisite zone for each evaluation. Refer to the specific aircrew chapter for requirements and the following:

1.9.6.1. Units will develop EPE program requirements (topics, special interests, etc.) and publish in unit supplements. The EPE will include areas commensurate with the examinee's level of training, qualification (e.g. initial, line, instructor, evaluator) or as specified in AFI 11-202V2 and MAJCOM Supplement. Units may utilize EPs demonstrated during simulator evaluations to fulfill this requirement.

1.9.6.2. Examinees may use publications that are normally available in-flight. The examinee must be able to recite all Boldface items from memory and provide the initial actions of selected emergency procedures that would not allow time for reference.

1.9.6.3. Examinees receiving an overall EPE grade of unqualified will be placed in supervised status until recommended additional training and re-evaluation are completed. Examinees receiving an overall EPE grade of unqualified because of unsatisfactory Boldface procedures will not be permitted to fly in their aircrew position until a successful re-evaluation is accomplished. Accomplish additional training IAW AFI 11-202V2.

1.9.7. Evaluation Prefixes/Unique MSN Suffixes. Use AFI 11-202V2 evaluation prefixes for AF Form 8, **Certificate of Aircrew Qualification**, and AF Form 942, **Record of Evaluation**. Utilize "Cargo" or "ARR" (air refueling receiver) parenthetical (e.g. MSN (Cargo) or MSN (ARR)) to distinguish unique MSN evaluations in the flight phase section of the AF Form 8 and AF Form 942. The first entry of the AF Form 8, Examiners Remarks, A. Mission Description will describe the circumstances for any required evaluation prefix or unique mission suffix.

1.9.8. Multiple Qualification/Difference Evaluations. When multiple aircraft qualifications are to be maintained, follow guidance in AFI 11-202V1 and AFI 11-202V2 and MAJCOM Supplement as applicable. The KC-135 community uses the phrase “difference” to describe training of one or more areas to meet certification requirements in the same series aircraft in the same MDS (e.g. Pacer CRAG Block 30 to Block 40, MPRS, T-Model difference certification).

1.9.9. Manual Gear Extension and Manual Flap Lowering. Mandatory on all navigator and boom operator initial qualification and initial instructor boom/navigator evaluations. Flap lowering may be accomplished in-flight or on the ground. Optional item for all other evaluations.

### **1.10. Grading Policies.**

1.10.1. Use the grading criteria in this instruction in conjunction with AFI 11-202V2 to grade areas/subareas accomplished during an evaluation.

1.10.2. When in-flight or simulator evaluation of a required area is not possible, the area may be verbally evaluated. Flight examiners will make every effort to evaluate all required areas/subareas via flight, simulator or static training tools before resorting to this provision, to include scheduling an evaluation completion sortie/simulator. When a verbal evaluation is used, the evaluator will identify the area or items within the area that were verbally evaluated on AF Form 8 as an examiner remark (following the mission description).

1.10.2.1. For pilots only, if the flight manual recommends a specific airspeed range for performance of a maneuver, the flight examiner will apply the grading criteria to the upper and lower limits of that range.

1.10.2.2. Flight examiners will use sound judgment in the application of the grading criteria in this instruction to determine the final grade.

### **1.11. Grading System.** Refer to AFI 11-202V2.

### **1.12. Conduct of Evaluations.**

1.12.1. Flight examiners will pre-brief the examinee on the conduct, purpose, requirements of the evaluation, and all applicable evaluation criteria. Flight examiners will then evaluate the examinee in each graded area/subarea.

1.12.1.1. Flight examiners will normally not evaluate personnel they have primarily trained, recommended for upgrade evaluation, or who render their effectiveness/performance reports.

1.12.1.2. Unless otherwise specified, flight examiners may conduct the evaluation in any crew position/seat which will best enable the flight examiner to observe the examinee's performance. As a last resort, evaluator pilots may conduct evaluations when scheduled as primary aircrew members and in this case will perform all duties required of that position (e.g., mandatory advisory calls, etc.).

1.12.2. Note discrepancies and deviations from prescribed tolerances and performance criteria during the evaluation. Compare the examinee's performance with the tolerances provided in the grading criteria and assign an appropriate grade for each area.

1.12.2.1. An evaluation will not be changed to a training mission to avoid documenting substandard performance, nor will a training mission be changed to an evaluation.

1.12.2.2. The judgment of the flight examiner, guidance provided in AFI 11-202V2, and this instruction will be the determining factors in assigning an overall grade. The flight examiner will thoroughly 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.

1.12.2.3. In the event of unsatisfactory performance, the flight examiner will determine additional training requirements and restrictions, whether critical or non-critical. Normally, additional training should not be accomplished on the same flight. **EXCEPTION:** Additional training on the same flight is allowed when, in the evaluator's judgment, unique situations presenting valuable training opportunities (e.g., thunderstorm avoidance, crosswind landings) exist. This option requires utmost flight examiner discretion and judicious application. When used, the examinee must be informed of when the additional training begins and ends.

1.12.2.4. When evaluations are less than Q-1 performance, the flight examiner will debrief the examinee and examinee's commander (supervisor).

1.12.3. A certified simulator/training device will be used to accomplish additional training and re-checks when available and when criteria to be graded can be realistically accomplished in the device.

1.12.4. The flight examiner who administered the original evaluation will not administer the recheck, unless there is no other option available to ensure timely completion of evaluation.

**1.13. Unsatisfactory Performance – Evaluator Responsibilities.** Refer to AFI 11-202V2.

**1.14. Use of AF Form 3862, Aircrew Evaluation Worksheet.** Units (normally OGV) will overprint AF Form 3862/PEX version, using the examples at **Attachment 2**, **Attachment 3**, or **Attachment 4**, to use as an evaluation worksheet. Copy each title, area number and text (in the order illustrated) to the appropriate blocks. Units may add special interest items and/or local evaluation requirements. Use the worksheet to ensure all required areas are evaluated. File the examiner-signed worksheet or draft copy of the AF Form 8 in the aircrew member's Flight Evaluation Folder (FEF) immediately after the flight evaluation as a temporary record of the evaluation results. Maintain until the finished AF Form 8 is added to the FEF, then discard.

1.14.1. Trends. Record performance data for tracking aircrew trends. Performance information is required only for major areas; units may optionally record information for sub-areas (example: a full flap landing followed by a touch-and-go can be recorded under the major area of "Landings" or can optionally be recorded under both "Normal Landing (50 Flap)" and "Touch-and-Go").

**1.15. Aircrew Testing.** For all initial and RQ evaluations, testing requirements are prerequisites. For all other evaluations, testing requirements are requisites. See specific testing requirements in AFI 11-202V2 and include the following:

1.15.1. Secure Question Bank (SQB). Each unit will maintain a SQB from which Open Book and Instructor Open Book exams will be derived. The unit SQB may be a single question bank (containing all questions for all crewmembers) or may be separate question

banks (separate question banks for each crew position, mission, and/or aircraft type; there may also be classified and unclassified SQBs). As a minimum, SQB questions will be drawn from appropriate information contained in FCIF Volumes I, II, III, and IV (per AFI 11-202 Volume 2); however, questions may come from any source deemed pertinent to the operation of unit aircraft and performance of the assigned mission.

1.15.2. Open Book Exam (Open Book). The open book examination will consist of a minimum of 40 questions from the SQB.

1.15.3. Closed Book (Closed Book). The closed book exam will consist of a minimum of 20 questions derived from the Master Question File (MQF). All crewmembers with Boldface responsibilities will complete a Boldface exam in conjunction with the closed book examination.

1.15.4. Instrument Exam. Pilots and navigators only, see AFI 11-202V2 instrument requirements.

### **1.16. Typical KC-135 Evaluation Profile.**

1.16.1. Units determine a flight evaluation profile to maximize successful completion of all evaluation requirements on a single in-flight mission. A typical profile may include takeoff, cruise, rendezvous, air to air refueling (AAR), and transition when pilot QUAL and INSTM portions are to be accomplished in-flight along with the MSN evaluation. Aircrew training simulator (ATS) profiles will be used for accomplishment of simulator evaluations. Flight examiners may alter the order of maneuver accomplishment and may request to see additional maneuvers. Flight examiners may not alter mission parameters (weather, winds, gross weight, etc) from restrictions placed in this volume or HQ AMC approved ATS courseware.

**1.17. Senior Officer Requirements.** See AFI 11-202V1, *Aircrew Training*, and the appropriate aircrew chapter.

## Chapter 2

### PILOT EVALUATIONS

**2.1. General.** This chapter standardizes initial, periodic, and re-qualification evaluations, including the requirements for instrument, qualification, mission, and instructor pilot evaluations.

2.1.1. Flight evaluation of INSTM/QUAL is not authorized when ATS is collocated with unit of assignment (EXCEPTION: Refer to paragraph 1.9). Events that are accomplished during ATS portion of the evaluation are not required to be evaluated again (e.g. if a non-precision approach is flown during a one engine inoperative approach and landing, it does not have to be re-accomplished during the instrument phase of the check ride); however a landing will be accomplished in flight in conjunction with the MSN evaluation. Events accomplished during the flight portion of the evaluation are not required to be evaluated again during the ATS portion of the evaluation.

2.1.2. Examiner pilots will utilize the standard ATS evaluation profile. Ceiling for all simulator evaluations will be set no lower than 200 feet above the lowest compatible circling approach minimums. Visibility will be set no lower than 1 mile above the lowest compatible circling approach minimums. Crosswinds for simulator evaluations will not be greater than 10 knots.

**2.2. Instrument Evaluations (Initial, Periodic and Re-qualifications).** KC-135 instrument evaluations should be combined with a qualification evaluation. Include all items under GENERAL and INSTRUMENT. Evaluations will be conducted in a certified simulator when collocated at the unit. The OG/CC is the waiver authority for conducting INST/QUAL evaluations in the aircraft due to simulator availability. Forward approved waivers to AMC/A3VK through AFRC/A3V and NGB/A3O. In addition, document waivers in SEB minutes.

**2.3. Qualification Evaluations (Initial, Periodic and Re-qualification).** KC-135 qualification evaluations should be combined with instrument evaluation. Include all areas under GENERAL, and QUALIFICATION. Evaluations will be conducted in a certified simulator when collocated at the unit. The OG/CC is the waiver authority for conducting INST/QUAL evaluations in the aircraft due to simulator availability. Forward approved waivers to MAJCOM/A3V who will in-turn provide copies to AMC/A3VK. In addition, document waivers in SEB minutes.

2.3.1. FPC (qualified legacy copilot). Evaluate pilot duties performed from the right seat. Engine-out activity, touch and go, and 30/40 flap landing not required.

2.3.2. FP (flight pilot – e.g. senior officer), FPQ (pilot initial qualification pilot – “PIQ”), MP (mission pilot), IP (instructor pilot). Evaluate FPQ and MP on at least one landing in both left and right seats. A 30 or 40 flap landing is required for dual seat qualified pilots but may be accomplished in either seat. Four-Engine pattern work not required. An instructor pilot may receive all periodic evaluations in either seat, but are not required to be evaluated in both. If an IP evaluation takes place in the right seat, taxi and full-stop braking do not need to be evaluated.

**2.4. Mission Evaluations (Initial, Periodic, and Re-qualifications).** Include all areas under GENERAL and MISSION (Tanker AAR). Rendezvous is required. Receiver must maintain the

contact position (minimum duration determined by evaluator) but an actual offload is not required. Autopilot-off AAR is required on at least one contact (duration at the discretion of the evaluator). When INSTM/QUAL evaluation is performed in ATS, a landing will be accomplished per pilot in conjunction with the MSN evaluation.

2.4.1. FPC. Evaluate pilot duties performed from the right seat.

2.4.2. IP, MP, FPQ. Pilots can be evaluated in either seat and will be evaluated on AAR and a breakaway as the pilot flying. Breakaway procedures can be evaluated with receiver not in contact, but within the AAR envelope.

2.4.3. Senior Officer Basic (QUAL) Qualification. Senior Officer initial, periodic and re-qualification evaluations include the areas under GENERAL, QUALIFICATION, and INSTRUMENT. Area 13D, Right Seat Landing and Area 16, Simulated Engine-Out Ops are not required.

2.4.3.1. Conduct an EPE to Senior Staff Officers in a random selection of Boldface procedures.

2.4.3.2. Testing requirements. Senior Officer initial, periodic and re-qualification evaluations include the following requisites:

2.4.3.2.1. Instrument exam.

2.4.3.2.2. KC-135 Open book test.

2.4.3.2.3. KC-135 Closed book test.

2.4.3.2.4. Boldface exam.

2.4.3.3. Annotate AF Form 8 crew position as "FP", type of evaluation is QUAL/INSTM and include an expiration date. Add the following restriction in the remarks: "RESTRICTION: This evaluation permits operating the aircraft from a primary crew position only under direct supervision of an instructor pilot."

## **2.5. Additional Qualification/Mission Evaluations.**

2.5.1. Receiver AAR. Include all areas under GENERAL and MISSION (Receiver AAR). For initial/re-qualification evaluations, rendezvous or closure from a minimum of 1 NM is required. Initial and re-qualification pilots will demonstrate 15 minutes of contact time within a 30-minute period of arriving in the astern position. Evaluate aircraft commanders in left seat. Evaluate instructors in either seat. During periodic evaluations, pilots will perform 10 minutes of contact time within a 20-minute period of arriving in the astern position. Evaluate limits demonstrations for instructor pilots, inadvertent disconnect tolerances and breakaway procedures. Conduct a portion of the evaluation with tanker autopilot off. Annotate "Receiver AAR Qualified" in the remarks section.

2.5.2. Operational Mission Evaluation (OME). A flight evaluation given to prospective aircraft commanders prior to aircraft commander certification. The profile must be balanced between mission availability and the imperative to not delay aircraft commander certification. The evaluation profile is at the discretion of the operations group commander or equivalent. With OG/CC or equivalent approval, a full qualification/instrument and/or mission evaluation administered just prior to aircraft commander certification may satisfy

this requirement. If a qualification/instrument and/or mission evaluation is used, the focus for the evaluation shall be on decision making and CRM.

2.5.2.1. Suggested profile for OME. Conduct in the left seat, ground operations, taxi, takeoff/departure, rendezvous and tanker AAR, descent/arrival, and off-station RON.

2.5.2.2. Documentation. Document the OME on the AF Form 8 as a "SPOT" evaluation and include the following comment in the remarks section, "This OME was conducted in conjunction with aircraft commander certification." If this evaluation is intended to satisfy the requirements of a qualification/instrument and/or mission evaluation, comply with the requirements in AFI 11-202V2 and this AFI. Include the remark "This evaluation was conducted in conjunction with aircraft commander certification."

**2.6. Instructor Evaluation.** Flight examiners will place particular emphasis on the examinee's ability to recognize student difficulties and provide timely, effective and corrective action. At a minimum, demonstrate and instruct a variety of approaches. **NOTE 1:** Pilots who desire to realign their INSTM/QUAL/MSN evaluation during the initial instructor evaluation will complete (demonstrate) all required areas/subareas in GENERAL, QUALIFICATION, MISSION (Tanker AAR), INSTRUCTOR, and complete all required requisite written examinations. **NOTE 2.** For Receiver AAR by an instructor pilot, limited inadvertent disconnects are permissible during a boom limits demonstration and will not be counted against the instructor pilot examinee at the examiner's discretion. **NOTE 3.** Initial instructor evaluations combined with a QUAL or MSN evaluation that results in a Q3 requires successful completion of the failed QUAL or MSN evaluation before attempting another INIT INSTR evaluation.

2.6.1. Conduct initial or requalification instructor evaluations with a qualified pilot occupying the other seat. On initial instructor evaluations, the examinee will occupy the right seat and a qualified instructor (or evaluator) will sit in the other seat for IP-only maneuvers and demos. Initial instructor evaluations are to be conducted in the simulator whenever possible and may be completed in the traffic pattern-only.

2.6.2. Administer periodic instructor evaluations in conjunction with INSTM/QUAL/MSN evaluation. Include all areas under GENERAL, QUALIFICATION, MISSION (Tanker AAR), MISSION (Receiver AAR) (if applicable), INSTRUMENT, and INSTRUCTOR.

**2.7. Emergency Procedures Evaluation (EPE).** Unit determines EPE requirements. EPE will normally be conducted in certified simulator in conjunction with INSTM/QUAL evaluation. One-on-one discussions or on-aircraft evaluation methods may be utilized when certified simulator is not available to conduct the EPE. The EPE should cover a cross section of aircraft systems. Examinees should be able to demonstrate an understanding of aircraft systems in emergency scenarios. Include situations during takeoff/climb-out, cruise, and approach to landing phases. The EPE may also include emergency egress, aircrew flight equipment (AFE), and FCIF and/or special interest identified EPE topics.

## **2.8. Pilot Grading Criteria.**

2.8.1. General.

### **Area 1, Directives and Publications.**

- Q Possessed a high level of knowledge of all applicable aircraft publications and procedures and understood how to apply both to enhance mission accomplishment. Publications were current and properly posted.
- Q- Unsure of some directives but could locate information in appropriate publications. Publications were current but improperly posted.
- U Unaware of established procedures and/or could not locate them in the appropriate publication in a timely manner. Publications were not current.

### **Area 2, Mission Preparation/Planning/Performance.**

- Q Checked all factors applicable to flight such as: weather, NOTAMs, alternate airfields, airfield suitability, fuel requirements, charts, etc. High level of knowledge of performance capabilities and operating data. Evaluated data intended for use during takeoff/landing after final adjustments and corrections were made:  
S1, Vrotate, Vclimbout, flap retract: +/-3 KIAS  
Power Setting: .03 EPR (E) or 1.5% N1 (R)  
Critical Field Length (CFL): +/-500 feet and suitable for takeoff  
Landing speeds: +/-3 KIAS
- Q- Made minor errors or omissions in checking all factors that could have detracted from mission effectiveness. Marginal knowledge of performance capabilities and/or operating data. Performance calculations exceeded Q limits but did not exceed:  
S1, Vrotate, Vclimbout, flap retract: +/-5 KIAS  
Power Setting: .05 EPR (E) or 2.0% N1 (R)  
Critical Field Length (CFL): +/-800 feet and suitable for takeoff  
Landing speeds: +/-5 KIAS
- U Made major errors or omissions which would have prevented a safe or effective mission. Unsatisfactory knowledge of performance capabilities and/or operating data. Performance calculations exceeded Q- limits.

**Area 3, Use of Checklists. NOTE.** Deviations from checklist order are approved for CRM, equipment malfunctions, or equipment limitations as long as it is understood why each step is performed and why it occurs in a certain sequence. Coordination with the evaluator is required.

- Q Consistently used and called for the correct checklist and gave the correct response at the appropriate time throughout the mission.
- Q- Checklist responses were untimely and/or crewmember required continual prompting for correct response.
- U Used incorrect checklist or consistently omitted checklist items. Unable to identify the correct checklist to use for a given situation. Did not complete checklist prior to event.

**Area 4, Safety Consciousness (Critical).**

- Q     Aware of and complied with all safety factors required for safe aircraft operation and mission accomplishment.
- U     Not aware of or did not comply with all safety factors required for safe aircraft operation or mission accomplishment. Operated aircraft in a dangerous manner

**Area 5, Judgment/Compliance (Critical).**

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

**Area 6, Crew Coordination/Crew Resource Management (CRM).** See AFI 11-290, *Cockpit/Crew Resource Management Training Program*, and use AF Form 4031, CRM Skills Criteria Training/Evaluation, as a reference.

- Q     Effectively coordinated with other aircrew members throughout the assigned mission. Demonstrated knowledge of other crewmembers' duties and responsibilities. Effectively applied CRM skills throughout the mission.
- Q-    Crew coordination adequate to accomplish mission. Demonstrated limited knowledge of other crewmembers' duties and responsibilities.
- U     Poor crew coordination or unsatisfactory knowledge of other crewmembers' duties and responsibilities negatively affected mission accomplishment or safety of flight.

**Area 7, Communication Procedures.**

- Q     Complete knowledge of and compliance with correct communications procedures. Transmissions concise with proper terminology. Complied with and acknowledged all required instructions. Thoroughly familiar with and correctly operated, HAVE QUICK, IFF, and secure voice equipment, if required.
- Q-    Occasional deviations from procedures that required re-transmissions or resetting codes. Slow in initiating or missed several required radio calls. Transmissions contained extraneous matter, were not in proper sequence, or used non-standard terminology. Displayed limited knowledge of HAVE QUICK, IFF, and secure voice equipment, if required.

- U Incorrect procedures or poor performance caused confusion and jeopardized mission accomplishment. Omitted numerous radio calls. Displayed inadequate knowledge of HAVE QUICK, IFF, and secure voice equipment, if required.

#### **Area 8, Aircrew Flight Equipment systems/Egress.**

- Q Displayed thorough knowledge of location and use of AFE systems and equipment. Demonstrated and emphasized the proper operating procedures used to operate aircraft egress devices such as doors, windows, slide, rafts, and escape ropes, if used.
- Q- Limited knowledge of location and use of AFE systems and equipment. Unsure of the proper operating procedures used to operate some of the aircraft egress devices, if used.
- U Displayed unsatisfactory knowledge of location and use of AFE support systems and equipment. Unable to properly operate aircraft egress devices, if used.

#### **Area 9, Knowledge/Completion of Forms.**

- Q All required forms and/or flight plans were complete, accurate, readable, accomplished on time and IAW applicable directives. Reported an accurate debrief of significant events to applicable agencies (intelligence, maintenance, etc.).
- Q- Minor errors on forms and/or flight plans did not affect conduct of the mission. Incorrectly or incompletely reported some information due to minor errors, omissions, and/or deviations.
- U Did not accomplish required forms and/or flight plans. Omitted or incorrectly reported significant information due to major errors, omissions, and/or deviations.

#### **Area 10, Airmanship/Situational Awareness.**

- Q Executed the assigned mission in a timely, efficient manner. Demonstrated strict professional flight and crew discipline throughout all phases of flight. Conducted the flight with a sense of understanding and comprehension.
- Q- Untimely or inappropriate decisions degraded or prevented accomplishment of a portion of the mission. Resources were not always effectively used to the point that specific mission objectives were not achieved.
- U Decisions or lack thereof, resulted in failure to accomplish the assigned mission.

2.8.2. Qualification. Use the following criteria as general tolerances for airspeed, altitude, and heading/course. NOTES: **1:** Airspeed tolerances apply when a specific airspeed has been assigned by Air Traffic Control or prescribed in the flight manual. Airspeed “minus” tolerances are based on minimum maneuvering speed for aircraft configuration. **2:** Add 50 feet (when practical), 2 degrees, and +5 fast/-0 slow KIAS to “all engines operating” criteria for “operations with an engine out” criteria.

- Q     Airspeed: +5/-5 KIAS  
       Altitude: +/-100 feet (+/-75 feet RVSM airspace)  
       Heading/Course: +/-5 degrees
- Q-    Exceeds Q criteria but does not exceed:  
       Airspeed: +15/-5 KIAS  
       Altitude: +/-200 feet (+/-150 feet RVSM airspace)  
       Heading/Course: +/-10 degrees
- U     Exceeds Q- criteria.

### Area 11, Takeoff.

- Q     Maintained smooth, positive aircraft control throughout the takeoff. Performed the takeoff IAW flight manual and as published/directed.
- Q-    Minor deviations from published procedures without affecting safety of flight. Control was rough or erratic. Hesitant in application of procedures/corrections.
- U     Takeoff was potentially dangerous. Exceeded aircraft/systems limitations. Failed to establish proper climb attitude. Excessive deviation from intended flight path. Violated flight manual procedures. Exceeded Q- criteria.

### Area 12, VFR Pattern (Weather Permitting or Certified Simulator).

- Q     Performed traffic pattern and turn to final/final approach IAW published procedures. Aircraft control was smooth and positive. Constantly cleared area of intended flight.
- Q-    Performed traffic pattern and turn to final/final approach with minor deviations to procedures as published/directed. Aircraft control was safe but not consistently smooth and positive. Over/under shot final approach, but was able to intercept normal glide path. Adequately cleared area of intended flight.
- U     Did not perform traffic pattern and/or turn to final/final approach IAW published procedures. Displayed erratic aircraft control. Did not clear area of intended flight.

**Area 13, Landings.** Includes Subareas: Normal Landing (50 flap), Partial Flap (30 or 40 flap), Touch-and-Go Landing, Right Seat, and Left Seat.). NOTES: **1:** Specific items to evaluate include threshold altitude/airspeed, runway alignment, flare touchdown, and landing in a crab. Evaluate landing up to area 17, landing roll/braking. **2:** Airspeed tolerances apply to computed approach speed. **3:** Add 5 KIAS to all engines operating criteria for operations with an engine out criteria. **4:** Touch and go is N/A for FPCs. **5:** Dual seat qualified pilots will be evaluated in both seats. A partial flap landing is required for dual seat qualified pilots but may be accomplished in ether seat.

- Q Performed landings as published/directed IAW flight manual and met the following criteria:  
Airspeed: +5/-5 KIAS (increased landing speed must consider landing distance)  
Centerline: +/-15 feet left or right  
TCH: +25/-10 feet
- Q- Performed landings with minor deviation to procedures as published/directed. Landed in a crab. Exceeded Q criteria but not the following:  
Airspeed: +15/-5 KIAS (increased landing speed must consider landing distance)  
Centerline: +/-30 feet left or right  
TCH: +40/-10 feet
- U Landing not performed as published/directed. Exceeded Q- criteria.

### Area 13A, Normal Landing (50 flap)

NOTES: *1:* Dual seat qualified pilots will be evaluated in both seats. A normal landing is required for dual seat qualified pilots but may be accomplished in either seat.

- Q *Touchdown zone: 1000 to 3000 feet.* If computed flare distance is greater than 2,500 feet, use computed flare distance + 500 feet to determine the maximum touchdown point (example 2,600 + 500 = 3,100 feet, touchdown zone 1,000 to 3,100). Planned total landing distance will be less than runway available.
- Q- *Touchdown zone:* With computed flare distance of 2,500 feet or less, the touchdown was greater than 3000 feet but less than 3500 feet. With computed flare distance of 2,501 feet or more, the touchdown was greater than charted flare distance + 500 feet but less than charted flare distance + 1,000 feet.
- U Landing not performed as published/directed, or attempted when total landing distance was not computed or exceeded runway available. Exceeded Q- criteria.

### Area 13B, Partial Flap (30 or 40 flap)

NOTES:

*1:* Partial Flap (30 or 40) is N/A for FPCs.

*2:* A partial flap landing is required for dual seat qualified pilots but may be accomplished in either seat. Not required for senior officers with basic qualification.

- Q *Touchdown zone:* Computed flare distance +500 feet. Planned total landing distance will be less than runway available.
- Q- *Touchdown zone:* Computed flare distance +501 feet but less than computed flare distance +1,000 feet.
- U Landing not performed as published/directed, or attempted when total landing distance was not computed or exceeded runway available. Exceeded Q- criteria.

**Area 14, Landing/Roll, Braking.**

## NOTE:

*I:* Dual seat qualified pilots will be evaluated in the left seat in aircraft and do not require an evaluation in the right seat.

- Q Performed as published/directed IAW flight manual. Braking action was prompt and smooth.
- Q- Performed landings with minor deviation to procedures as published/directed. Braking action unnecessarily delayed or not smooth.
- U Landing not performed as published/directed. Braking actuated before touchdown. Exceeded Q- criteria

**Area 15, All Engine Go Around (GA), Copilots Only**

## NOTE:

*I:* Required for FPC. If observed for all others.

- Q Initiated and performed go-around promptly and IAW flight manual and directives. Applied smooth control inputs. Acquired and maintained a positive climb.
- Q- Slow or hesitant to initiate go-around. Slightly over-controlled the aircraft. Minor deviations did not affect mission accomplishment or compromise safety.
- U Did not initiate go-around when appropriate. Major deviations or misapplication of procedures could have led to an unsafe condition.

**Area 16, Simulated Engine Out Operations**

## NOTE:

*I:* Dual seat qualified pilots will be evaluated on all Area 16 areas/subareas but may be accomplished in ether seat.

2: Emergency set-up will include an actual malfunction when performed in the simulator.

- Q Proper control inputs were used to correct asymmetric condition. Aircraft was properly trimmed. Proper consideration was given to maneuvering the aircraft with regard to the “dead” engine.
- Q- Minor deviations in aircraft control allowed the aircraft to occasionally fly uncoordinated flight.
- U Aircraft was not properly trimmed. Aircraft control was erratic and consistently resulted in uncoordinated flight. Maneuvering the aircraft with regard to the “dead” engine was potentially unsafe.

**Subarea 16A, Engine Fire/Failure During Flight.**

- Q Performed all required procedures IAW the flight manual and directives. Applied smooth, positive, and coordinated control inputs. Rudder and aileron inputs were in correct direction and proper thrust inputs were made.
- Q- Procedural errors were made which did not affect safety. Aircraft control was not consistently smooth and positive. Rudder and aileron inputs were in correct direction but some over/under control. Thrust inputs detracted from aircraft performance or control.
- U Thrust, rudder and/or aileron inputs were incorrect. Exceeded Q- criteria.

**Subarea 16B, Engine Out Approach.**

NOTE:

*I:* Use approach criteria for the type of approach being flown and the following:

- Q Performed all required procedures IAW the flight manual and directives. Applied proper configuration for the approach, smooth aircraft control, and thrust management.
- Q- Procedural errors were made which did not affect safety. Aircraft control was not consistently smooth and positive. Thrust inputs detracted from aircraft performance or control.
- U Configuration for the approach, thrust, rudder and/or aileron inputs were incorrect. Exceeded Q- criteria.

**Subarea 16C, Engine Out GA.**

- Q Initiated and performed go-around promptly and IAW flight manual and directives. Applied smooth control inputs. Acquired and maintained a positive climb.
- Q- Slow or hesitant to initiate go-around. Slightly over-controlled the aircraft. Minor deviations did not affect mission accomplishment or compromise safety.
- U Did not initiate go-around when appropriate or directed. Major deviations or misapplication of procedures could have led to an unsafe condition.

**Subarea 16D, Engine Out Landing (use area 16 criteria).****Area 17, Boldface Emergency Procedures (Critical).**

- Q Correct, immediate responses. Maintained aircraft control. Coordinated proper crew actions.
- U Incorrect sequence, unsatisfactory response, or unsatisfactory performance of corrective actions

**Area 18, Other Emergency Procedures.**

- Q Operated within prescribed limits and correctly diagnosed problems. Performed/explained proper corrective action for each type of malfunction. Effectively used available aids.
- Q- Operated within prescribed limits but slow to analyze problems or apply proper corrective actions. Did not effectively use and/or experienced delays, omissions, or deviations in use of checklist and/or available aids.
- U Exceeded limitations. Unable or failed to analyze problem or take proper corrective action. Did not use checklist and/or available aids.

**Area 19, Systems Operations/ Knowledge/Limitations.**

- Q Demonstrated/explained a complete knowledge of aircraft systems operations/limitations and proper procedural use of systems including aircraft model differences (if qualified).
- Q- Marginal knowledge of aircraft systems operations and limitations in some areas. Used individual technique instead of established procedure.
- U Unsatisfactory systems knowledge. Unable to demonstrate/explain the procedures for aircraft system operations.

2.8.3. Instrument. Use the following criteria as general tolerances for airspeed, level-off altitude, and heading/course with all engines operating:

NOTES:

**1:** Airspeed tolerances apply when a specific airspeed has been assigned by Air Traffic Control or prescribed in the flight manual. Airspeed “minus” tolerances are based on minimum maneuvering speed for aircraft configuration.

**2:** Add 5 KIAS, 50 feet (when practical), and 2 degrees to all engines operating criteria for operations with an engine out criteria.

- Q     Airspeed: +5/-5 KIAS  
        Altitude: +/-100 feet (+/-75 feet RVSM airspace)  
        Heading/Course: +/-5 degrees
- Q-     Exceeds Q criteria but does not exceed:  
        Airspeed: +15/-5 KIAS  
        Altitude: +/-200 feet (+/-150 feet RVSM airspace)  
        Heading/Course: +/-10 degrees
- U     Exceeds Q- criteria.

**Area 20, Instrument Departure/SID.**

- Q Complied with all restrictions or controlling agency instructions. Made all required reports. Applied course/heading corrections promptly. Demonstrated smooth, positive control.
- 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.
- U Failed to comply with published/directed departure, or controlling agency instructions. Accepted an inaccurate clearance. Aircraft control was erratic.

**Area 21, En Route Navigation/FMS.**

- Q Satisfactory capability to navigate using all available means. Used appropriate navigation procedures. Complied with clearance instructions. Aware of position at all times. Remained within the confines of assigned airspace.  
TACAN/VOR-DME Arc: +/-2 NM
- Q- Minor errors in procedures/use of navigation equipment. Slow to comply with clearance instructions. Had some difficulty in establishing exact position and course. Slow to adjust for deviations in time and course. Exceeded Q criteria but not:  
TACAN/VOR-DME Arc: +/-4 NM
- U Major errors in procedures/use of navigation equipment. 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.

**Area 22, Holding.** (If available, else verbally evaluate.)

NOTE:

*I:* Not required for senior officers.

- Q Performed entry and holding IAW published procedures and directives.  
Timing: +/-15 seconds  
DME: +/-2 DME  
EFC: +/- 2 minutes (if assigned)
- Q- Performed entry and holding procedures with minor deviations. Exceeded Q criteria but not:  
Timing: +/-20 seconds  
DME: +/-3 DME
- U Holding was not IAW flight manual, directives, or published procedures. Exceeded Q- criteria.

**Area 23, Use of NAVAIDS.**

- Q Ensured NAVAIDS were properly tuned, identified, and monitored.
- Q- Some deviations in tuning, identifying, and monitoring NAVAIDS.
- U Did not ensure NAVAIDS were tuned, identified, and monitored.

**Area 24, Descent/Arrival.**

- Q Performed descent as directed. Complied with all flight manual, controlled/issued, or STAR restrictions in a proficient manner. Accomplished all required checks.
- Q- Performed descent as directed with minor deviations that did not compromise mission safety. Slow to accomplish required checks.
- U Performed descent with major deviations. Did not accomplish required checks. Erratic corrections. Exceeded flight manual limitations.

**Area 25, Precision Approaches.** One required. Includes Subareas: PAR and ILS. Use the following criteria as general tolerances for airspeed, altitude, heading, glide slope, and azimuth.

NOTES:

- 1:* Airspeed tolerances are based on computed approach speed.
- 2:* Add 5 KIAS, 50 feet (when practical), and 2 degrees to all engines operating criteria for operations with an engine out criteria.
- 3:* If PAR is flown for precision approach credit a radar approach will not be flown to satisfy non-precision approach requirement.

- Q Airspeed: +10/-5 KIAS  
Altitude: Initiated missed approach at decision height +50/-0 feet  
Heading: +/-5 degrees of controller's instructions (PAR)  
Glide Slope: Within one dot (ILS)  
Azimuth: Within one dot (ILS)
- Q- Exceeded Q criteria but does not exceed:  
Airspeed: +15/-5 KIAS  
Altitude: Initiated missed approach at decision height +100/-0 feet  
Heading: +/-10 degrees of controller's instructions (PAR)  
Glide Slope: Within one dot low, two dots high (ILS)  
Azimuth: Within two dots (ILS)
- U Exceeded Q- criteria.

**Subarea 25A, PAR.**

- Q Approach was IAW published procedures. Smooth and timely response to controller's instructions. Established initial glide path and maintained with only minor deviations.

Complied with decision height. Position would have permitted a safe landing. Elevation did not consistently exceed slightly above or slightly below glide path.

- Q- Performed approach with minor deviations. Slow to respond to controller's instructions and make corrections. Improper glide path control. Complied with decision height. Position would have permitted a safe landing. Elevation did not exceed well above or well below glide path.
- U Approach not IAW flight manual, directives, or published procedures. Erratic corrections. Did not respond to controller's instructions. Did not comply with decision height and/or position would not have permitted a safe landing. Erratic glide path control. Exceeded Q- criteria.

### Subarea 25B, ILS.

- Q Approach was IAW published procedures. Smooth and timely corrections to azimuth and glide slope. Complied with decision height. Position would have permitted a safe landing. Maintained glide path with only minor deviations.
- Q- Performed approach with minor deviations. Slow to make corrections. Slow to comply with decision height. Position would have permitted a safe landing. Improper glide path control.
- U Approach not IAW flight manual, directives, or published procedures. Erratic corrections. Did not comply with decision height and/or position at decision height would not have permitted a safe landing.

**Area 26, Non Precision Approaches.** One Required. Includes Subareas: TACAN, Localizer (LOC)/VOR, ASR, and GPS. Use the following description and criteria as general tolerances for airspeed, altitude at MDA/step-down fixes, heading, course, timing, and distance with all engines operating.

#### NOTES:

- 1: Airspeed tolerances are based on computed approach speed.
- 2: Add 5 KIAS, 50 feet (when practical), and 2 degrees to all engines operating criteria for operations with an engine out criteria.
- 3: One non precision approach must be flown.
- 4: Dual seat qualified pilots will accomplish at least one approach in each seat.

- Q Approach was IAW published procedures. Used appropriate descent rate to arrive at MDA at or before VDP. Position would have permitted a safe landing. Smooth and timely response to controller's instructions (ASR).  
 Airspeed: +10/-5 KIAS  
 MDA: +100/-0 feet  
 Course: +/-5 degrees at MAP (NDB, VOR, TACAN), less than one dot deflection (LOC, GPS)

Timing: Computed/adjusted timing to determine MAP within 20 seconds (when required).

Distance: Determined MAP within +/-0.5 Miles

- Q- Performed approach with minor deviations. Arrived at MDA at or before the MAP. Position would have permitted a safe landing. Slow to respond to controller's instructions and make corrections (ASR). Exceeded Q criteria but does not exceed:  
 Airspeed: +15/-5 KIAS  
 MDA: +150/-0 feet  
 Course: +/-10 degrees at MAP (NDB, VOR, TACAN), more than one dot, but less than two dot deflection (LOC, GPS)  
 Timing: Computed/adjusted timing to determine MAP within 30 seconds (when required).  
 Distance: Determined MAP within +/-0.5 Miles
- U Approach not IAW published procedures. Maintained steady-state flight below the MDA, even though the -50 foot limit was not exceeded. Position would not have permitted a safe landing. Failed to compute or adjust timing to determine MAP (when required). Exceeded Q- criteria.

**Area 27, Circling Approach** (If available, else verbally evaluate.)

NOTE:

*I:* Not required for senior officers.

- Q Properly identified aircraft category for the approach and remained within the lateral limits IAW AFMAN 11-217 Vol 1. 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.
- Q- Properly identified aircraft category for the approach and remained within the lateral limits for that category. Slow to comply with controller's instructions. Attained runway alignment but occasionally required excessive bank angles or maneuvering.
- 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 a position for a normal glide path or landing.

**Area 28, Missed Approach.**

- Q Executed missed approach IAW published procedures. Complied with controller's instructions. Applied smooth control inputs.
- Q- Executed missed approach with minor deviations to published procedures. Slow to comply with controller's instructions. Slightly over-controlled the aircraft.

- U Did not execute missed approach IAW flight manual, directives, or published procedures. Did not comply with controller's instructions. Deviation or misapplications of procedures could have led to an unsafe condition.

#### 2.8.4. Instructor.

### Area 29, Instructor Responsibility (Critical).

- Q Demonstrated the ability to communicate effectively. Provided appropriate guidance when necessary. Planned ahead and made timely decisions. Identified and corrected potentially unsafe maneuvers/situations.
- U Unable to effectively communicate or provide timely feedback 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.

### Subarea 29A, Instructor Ability (Critical).

- Q Effectively demonstrated procedures and techniques. Thorough knowledge of applicable aircraft systems, procedures, publications, and directives.
- U Did not demonstrate correct procedure or techniques. Insufficient depth of knowledge about applicable aircraft systems, procedures, and/or proper source material.

### Subarea 29B, Student Briefing/Critique (Critical). (See Table 4.1. and Table 4.2.)

- Q Briefings were well organized, accurate, and thorough. Reviewed student's present level of training and defined mission events to be performed. During the critique, demonstrated an effective ability 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.
- U Briefings were marginal or non-existent. Did not review student's past performance. Failed to adequately critique student or analyze the mission. Training grade did not reflect actual performance of student. Overlooked or omitted major discrepancies. Incomplete pre-briefing of student's next mission, if required.

#### 2.8.5. Mission.

### Area 30, Ground Operations/Taxi.

#### NOTE:

*I:* Dual seat qualified pilots will be evaluated in the left seat and do not require an evaluation in the right seat.

- Q Established and adhered to start engine, taxi, and take-off time to ensure thorough preflight, check of personal equipment, crew/passenger briefings, etc. Accurately determined readiness of aircraft for flight. Completed all systems pre-flight/post-flight

inspections IAW flight manual. Conducted taxi operations according to flight manuals, AFI 11-218, *Aircraft Operation and Movement on the Ground*, and local procedures.

- Q- Same as above except for minor procedural deviations that did not detract from mission effectiveness.
- U Crew errors directly contributed to a late takeoff that degraded the mission. Failed to accurately determine readiness for flight. Failed to preflight/post-flight a critical component or could not conduct a satisfactory preflight/post-flight inspection.

### **Area 31, Takeoff.**

NOTE:

**I:** Dual seat qualified pilots will be evaluated in the left seat and do not require an evaluation in the right seat.

- Q Maintained smooth, positive aircraft control throughout the takeoff. Performed the takeoff IAW flight manual and as published/directed.
- Q- Minor deviations from published procedures without affecting safety of flight. Control was rough or erratic. Hesitant in application of procedures/corrections.
- U Takeoff was potentially dangerous. Exceeded aircraft/systems limitations. Failed to establish proper climb attitude. Excessive deviation from intended flight path. Violated flight manual procedures. Exceeded Q- criteria.

### **Area 32, Radar Operations/Weather Avoidance/Windshear.**

- Q Effectively demonstrated procedures for operating weather radar. Updated weather radar/analysis throughout the mission. Highly knowledgeable of windshear detection and avoidance equipment, including minimum groundspeed ( $V_{MGS}$ ). Used all available sources to determine if and/or to what degree severe weather conditions exist. Complied with all weather separation and windshear avoidance requirements.
- Q- Minor deviations observed when operating weather radar. Did not update radar/weather analysis during worsening weather conditions. Limited knowledge of windshear detection and avoidance equipment. Complied with all weather separation and windshear avoidance requirements.
- U Unable to demonstrate proper use of weather radar. Failed to update radar/weather analysis during the mission. Displayed unsatisfactory knowledge of windshear detection and avoidance equipment. Failed to comply with weather separation or windshear avoidance requirements.

### **Area 33, Fuel Conservation.**

- 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 mission planning and throughout the mission.
- 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 failed to apply fuel conservation procedures during mission planning or during several key phases of the mission.
- U Unaware of fuel conservation procedures. Failed to apply any fuel conservation procedures in any area of the mission.

**Area 34, Landing.** One required. Includes Subareas: Normal Landing (50 flap), Partial Flap (30 or 40 flap), Touch-and-Go Landing, (Right Seat and Left Seat.). (See notes 1-5)

NOTES:

- 1: Specific items to evaluate include threshold altitude/airspeed, runway alignment, flare touchdown, and landing in a crab. Grade landings IAW Areas 13 and 14 of this chapter.
- 2: Airspeed tolerances apply to computed approach speed.
- 3: Add 5 KIAS to all engines operating criteria for operations with an engine out criteria.
- 4: Touch and go is N/A for FPCs.
- 5: Dual seat qualified pilots will be evaluated in both seats. A 30 or 40 flap landing is required for dual seat qualified pilots but may be accomplished in either seat.

**Area 35, Tanker AAR.** Includes subareas: 35A--Rendezvous, 35B--Platform Control, 35C--Breakaway, 35D--Overrun Procedures, and 35E--Tanker AAR formation. (See notes 1-5)

NOTES:

- 1: When refueling with autopilot off, add 100 feet, 5 KIAS, and 5 degrees to all tolerances.
- 2: Evaluate AAR Formation, if observed.
- 3: Tanker Overrun; if not observed, verbal.
- 4: To evaluate platform control, the receiver aircraft must, at a minimum, be in the contact position. An actual offload is not required.
- 5: Instructors and Dual seat qualified pilots can be evaluated in either seat and will be evaluated on a breakaway as the pilot flying. Pilot not flying duties will be verbally evaluated. Copilots will be evaluated in the right seat and will be evaluated on copilot duties.

- Q Aircraft control was smooth and positive. Performed all checklists and complied with procedures outlined in the flight manual and other governing directives. Met the following criteria:  
 Airspeed: +10/-5 KIAS  
 Altitude: +/-200 feet  
 Heading/Course: +/-5 degrees
- Q- Aircraft control was not always smooth and positive, but was adequate. Accomplished procedures required by the flight manual, checklists, and other governing directives with

deviation/omissions which did not affect safety of flight. Exceeded Q criteria but does not exceed:

Airspeed: +15/-5 KIAS

Altitude: +/-300 feet

Heading/Course: +/-10 degrees

- U Had deviations/omissions that affected flight safety and/or the successful completion of AAR. Exceeded Q- limits.

**Area 36, Formation (if observed).** Includes subareas: 36A--Lead, Departure, & Joinup, 36B -- Enroute, Position Change, Breakup, and 36C -- AAR Formation.

- Q Established and maintained briefed position. Aircraft control was positive and smooth. Demonstrated a complete knowledge of procedures. Performed all procedures in accordance with applicable checklists and other governing directives.
- Q- Slow to recognize and apply needed corrections to establish and maintain proper position. Aircraft control was not always positive and smooth, but was adequate. Performed all procedures in accordance with applicable checklists and other governing directives with only minor omissions or deviations.
- U Erratic or dangerous. Had deviations/omissions that affected safety of flight. Did not perform all procedures in accordance with applicable checklists and other governing directives or omitted major items.

#### 2.8.6. Mission (Receiver AAR).

**Area 37, Receiver AAR (if qualified).** Includes subareas: Rendezvous, Closure, AAR position/control, Overrun procedures, Breakaway, and IP right seat AAR limit demonstration (see notes 1 and 2).

NOTES:

**1:** Receiver Overrun; if observed, else verbally evaluate.

**2:** Right Seat AAR / Limit Demo (IP only).

- Q Established and maintained proper refueling position. Aircraft control was positive and smooth. Demonstrated a complete knowledge of rendezvous and closure procedures. Performed all procedures in accordance with applicable checklists and other governing directives. Met the following criteria:  
Airspeed: +10/-5 KIAS  
Altitude: +/-200 feet  
Inadvertent Disconnects: 3 or less for initial qualification, 2 or less otherwise (N/A IP Limit Demo)
- Q- Slow to recognize and apply needed corrections to establish and maintain proper refueling position. Aircraft control was not always positive and smooth, but was adequate. Accomplished rendezvous and closure with deviations and/or missions which did not affect safety of flight or the successful completion of AAR. Performed all

procedures in accordance with applicable checklists and other governing directives with only minor omissions or deviations. Exceeded Q criteria but did not exceed:

Airspeed: +15/-5 KIAS

Altitude: +/-300 feet

Inadvertent Disconnects: 4 or less initial QUAL or 3 or less otherwise (N/A IP Limit

Demo)

- U Erratic or dangerous in the pre-contact/refueling position. Had deviations/omissions that affected safety of flight and/or successful completion of AAR. Did not perform all procedures in accordance with applicable checklists and other governing directives or omitted major items. Exceeded Q- limits.

#### **Area 38. Tactics (If observed).**

- Q Demonstrated satisfactory knowledge of tactics. Applied appropriate tactics to avoid the threat and minimize exposure. Made timely and appropriate inputs to crew during mission.
- Q- Minor errors in threat analysis or tactics selection. Limited knowledge of appropriate tactic for a given scenario. Did not make timely inputs to crew during mission.
- U Unsatisfactory tactics knowledge. Major errors in threat analysis or tactics selection would have resulted in an unsuccessful mission.

#### **Area 39. Threat Avoidance (If observed).**

- Q Able to plot threats in-flight and formulate a plan of action to avoid lethal range of given threat system. Executed the proper evasive maneuver when given an immediate threat. Aware of appropriate tactics to avoid threats and exposure.
- Q- Made minor errors in plotting and avoiding the lethal range of a given threat system. Minor errors in threat analysis or tactics selection.
- U Unable to plot a given threat. Did not avoid lethal range of given threat system. Did not execute an effective evasive maneuver when given an immediate threat. Not aware of appropriate tactics for specific threats or terrain.

#### **Area 40. Tactical Arrival (If observed).**

- Q Followed procedures as briefed. Smooth positive control throughout the recovery. Aircraft in position to intercept glidepath to intended touchdown point. Constantly cleared area of intended flight.
- Q- Performed recovery with minor deviations to published procedures. Aircraft control was not consistently positive and smooth. Over/under-shot final approach slightly but was able to intercept glidepath to intended touchdown point.

- U Recovery not performed IAW flight manual directives or published procedures. Displayed erratic aircraft control. Over/under-shot final approach requiring a go-around or potentially unsafe maneuvering to intercept final. Did not clear area of intended flight.

## Chapter 3

### NAVIGATOR EVALUATIONS

**3.1. General.** This chapter standardizes initial, periodic, and requalification evaluations, including the requirements for qualification, mission, and instructor navigator evaluations. When no Evaluator Navigators are available, navigator evaluations may be accomplished by an Evaluator Pilot.

**3.2. Qualification/Mission Evaluations (initial, periodic and re-qualification).** Include all areas under GENERAL, QUALIFICATION, MISSION (Tanker AAR).

3.2.1. Basic Navigator. Include only areas 1 through 18.

3.2.2. Initial: Include all areas under “GENERAL” and “QUALIFICATION”. Annotate AF Form 8, Flight Phase as INIT QUAL. Requisites: End-of-course and Boldface taken at Flight Safety and the IRC taken at OGV.

3.2.3. MISSION.

3.2.3.1. Initial: All areas under “GENERAL” and MISSION. Annotate AF Form 8, Flight Phase as INIT MSN/QUAL. Requisites: Closed Book, Open Book, IRC, and Boldface.

3.2.3.2. Periodic: Complete in conjunction with QUAL/MSN evaluation. Requisites: Closed Book, Open Book, IRC, and Boldface.

3.2.3.3. Difference Evaluations. Unless specified otherwise, navigators do not require a flight evaluation to obtain qualification in a different model KC-135 (i.e. KC-135T).

**3.3. Instructor Evaluations.** The flight examiner will place particular emphasis on the examinee’s ability to recognize student difficulties and provide timely and effective instruction.

3.3.1. Initial instructor evaluations. Will be conducted with the examinee instructing a navigator Initial instructor evaluations will include (at a minimum) all items under GENERAL, QUALIFICATION, MISSION (Tanker AAR), and INSTRUCTOR.

3.3.2. Initial instructor evaluations will accomplish landing gear alternate extension and main flap manual operation procedures . For initial instructor evaluations, this requirement may be demonstrated to a student or evaluator navigator.

3.3.3. Administer periodic instructor evaluations in conjunction with QUAL/MSN evaluation.

**3.4. Emergency Procedures Evaluation (EPE).** Unit determines EPE requirements. Conduct the EPE normally as a ground evaluation before the in-flight evaluation portion of evaluation. Use one-on-one discussions, an ATD (MAJCOM specified), or on-aircraft evaluation methods to conduct the EPE. The EPE should cover a cross section of aircraft systems. Examinees should be able to demonstrate an understanding of aircraft systems in emergency scenarios. Include situations during takeoff/climb-out, cruise, and approach to landing phases. The EPE may also include emergency egress, Aircrew Flight Equipment systems, and FCIF and/or special interest identified EPE topics.

### 3.5. Navigator Grading Criteria.

#### 3.5.1. General.

#### Area 1, Directives and Publications.

- Q Possessed a high level of knowledge of all applicable aircraft publications and procedures and understood how to apply both to enhance mission accomplishment. Publications were current and properly posted.
- Q- Unsure of some directives but could locate information in appropriate publications. Publications were current but improperly posted.
- U Unaware of established procedures and/or could not locate them in the appropriate publication in a timely manner. Publications were not current.

#### Area 2, Mission Preparation/Planning. Includes subareas: 2A--General and 2B--Flight Planning.

#### Area 2A, General.

- Q Checked all navigation factors applicable to flight including weather, NOTAMs, alternate airfields, airfield suitability, and charts. Chart Preparation error free. PC-Accomplish/review mission flight plan without error.
- Q- Missed an essential navigation factor with only minor mission effect. Chart Preparation - one or more action points plotted in error greater than 5 NM but less than 15NM. Flight Planning – computed and used (ATC-filed or FMS-loaded for PC) one or more action points where no one error is greater than 10NM, but less than 15NM. Did not comply with mission planning requirements, but did not detract from safety or mission effectiveness.
- U Did not check navigation factors with direct effect on mission effectiveness. Exceeded Chart Preparation and Flight Planning Q- tolerances. Did not comply with requirements that had a direct effect on mission effectiveness.

#### Area 2B, Flight Planning.

- Q Manually completed a flight plan in its entirety, time errors did not exceed 5 minutes of total time to destination. Demonstrated manual flight planning procedures if a computer flight plan was not used. Selected current navigation charts of a proper scale for the type of the mission profile.
- Q- Minor errors or omissions that would not have adversely affected mission accomplishment. Time errors did not exceed 10 minutes.

- U Flight plan was incomplete, could not demonstrate manual procedures, or computer flight plan was not reviewed. Navigator manual flight plan contained major errors/omissions. Selected an improper or obsolete chart. Exceeded Q- criteria.

**Area 3, Use of Checklists. NOTE.** Deviations from checklist order are approved for CRM, equipment malfunctions, or equipment limitations as long as it is understood why each step is performed and why it occurs in a certain sequence. Coordination with the evaluator is required.

- Q Consistently ensured all appropriate checklists were used while completing items in a timely manner without omissions.
- Q- Completed in an untimely manner (delayed crew) or completed the checklist with minor omissions which did not detract from safety or mission effectiveness.
- U Used incorrect checklist or omitted checklist items which detracted from safety or mission effectiveness. Did not complete checklist prior to event.

**Area 4, Safety Consciousness (Critical).**

- Q Aware of and complied with all safety factors required for safe aircraft operation and mission accomplishment.
- U Not aware of or did not comply with all safety factors required for safe aircraft operation or mission accomplishment. Operated aircraft in a dangerous manner.

**Area 5, Judgment/Compliance (Critical).**

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

**Area 6, Crew Coordination/CRM.** See AFI 11-290, *Cockpit/Crew Resources Management Training Program*, and use AF Form 4031, **CRM Skills Criteria Training/Evaluation**, as a reference.

- Q Effectively coordinated with other aircrew members throughout the assigned mission. Demonstrated knowledge of other crewmembers' duties and responsibilities. Effectively applied CRM skills throughout the mission.
- Q- Crew coordination adequate to accomplish mission. Demonstrated limited knowledge of other crewmembers' duties and responsibilities.

- U Poor crew coordination or unsatisfactory knowledge of other crewmember duties and responsibilities negatively affected mission accomplishment or safety of flight.

**Area 7, Communication Procedures.**

- Q Complete knowledge of and compliance with correct communication procedures. Transmissions were concise with proper terminology. Accomplished required calls and acknowledgments with standard terminology. Consistently backed up crew for all ATC calls. Thoroughly familiar with and correctly operated IFF, secure voice, and SATCOM (if available) equipment.
- Q- Occasional deviation or omissions from required procedures, calls or acknowledgments that required re-transmissions or resetting codes. Occasional backup for ATC calls. Displayed a limited knowledge of communication equipment.
- U Incorrect procedures or poor performance caused confusion and jeopardized mission accomplishment. Failed to back up the crew for ATC calls or correct a known deviation. Displayed a lack of or poor operational knowledge of communication equipment.

**Area 8, Aircrew Flight Equipment systems/Egress.**

- Q Displayed thorough knowledge of location and use of Aircrew Flight Equipment support systems and equipment. Demonstrated and emphasized the proper operating procedures used to operate aircraft egress devices such as doors, windows, hatches, slide rafts, and escape ropes/pulleys, if used.
- Q- Limited knowledge of location and use of Aircrew Flight Equipment support systems and equipment. Unsure of the proper operating procedures used to operate some of the aircraft egress devices, if used.
- U Displayed unsatisfactory knowledge of location and use of Aircrew Flight Equipment support systems and equipment. Unable to properly operate aircraft egress devices, if used.

**Area 9, Knowledge/Completion of Forms.**

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

- U Did not accomplish required forms and/or flight plans. Omitted or incorrectly reported significant information to applicable agencies due to major errors, omissions, and/or deviations.

#### **Area 10, Airmanship/Situational Awareness.**

- Q Executed the assigned mission in a timely, efficient manner. Demonstrated strict professional flight and crew discipline throughout all phases of flight. Conducted the flight with a sense of understanding and comprehension.
- Q- Untimely or inappropriate decisions degraded or prevented accomplishment of a portion of the mission. Resources were not always effectively used to the point that specific mission objectives were not achieved.
- U Decisions, or lack thereof, resulted in failure to accomplish the assigned mission. Failed to exhibit strict flight and crew discipline.

##### 3.5.2. Qualification.

#### **Area 11, Ground Operations / Taxi.**

- Q Timely completion of all pre-flight checks and procedures without omission. Proper coordination with maintenance and crew when required. Ensured readiness of navigation equipment for flight.
- Q- Minor omissions or deviations which did not detract from safety or directly contribute to a late takeoff.
- U Failed to pre-flight a critical component or system. Errors, omissions or deviations directly contributed to a late takeoff or detracted from safety or mission effectiveness.

#### **Area 12, Departure.**

- Q Monitored headings, airspeeds, altitudes and aircraft position throughout departure. Used a SID and/or appropriate scale departure area chart. Provided headings, ETAs, 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.
- Q- Monitored aircraft position, but slow to provide headings, ETAs, or other required information. Performance did not degrade mission accomplishment nor compromise flight safety.
- U Did not monitor departure headings, airspeeds or altitudes. Unaware of aircraft position and unable to provide updated information when required. Did not use a SID and/or an appropriate scale departure area chart. Allowed major deviations that degraded mission accomplishment or compromised safety.

**Area 13, Radar Operations/Weather Avoidance/Windshear.**

- Q Effectively demonstrated procedures for operating the weather radar. Monitored and updated weather radar/analysis throughout the mission. Knowledgeable of windshear detection procedures including minimum groundspeed ( $V_{MGS}$ ). Used all available sources to determine if and/or to what degree severe weather conditions exist. Complied with all weather separation and windshear avoidance requirements.
- Q- Minor deviations observed when operating on-board radar. Did not update radar/weather analysis during worsening weather conditions. Failed to alter course to meet weather separation and windshear avoidance requirements but did not violate established limits. Limited knowledge of windshear detection and avoidance equipment.
- U Unable to demonstrate proper use of on-board radar. Failed to update radar/weather analysis during the mission. Failed to comply with weather separation or windshear avoidance requirements that could have or jeopardized safety or mission success. Displayed unsatisfactory knowledge of windshear detection and avoidance equipment.

**Area 14, General Navigation and Course Adherence.** Includes general navigation in controlled airspace, e.g., MNPS, RNP-10, etc.

- Q Thorough knowledge of en-route time status in relation to objective area. Complied with all altitude restrictions. Adhered to all airspace restrictions. Remained within 3 NMs of course centerline (**EXCEPTIONS**: Threat avoidance, weather deviation, ATC assigned heading) or less than or equal to ATC course tolerances.
- Q- Uncertain of exact aircraft position due to marginal navigational procedures. Better awareness of required timing events or en-route time status could have avoided excessive, or unplanned maneuvering. Flew 3 to 5 NMs from course without the above exceptions. Momentary exceeded ATC course tolerances with correction to return to centerline.
- U Unable to maintain position awareness throughout most of the route. Unable to accurately assess required timing or unaware of mission time status, jeopardizing formation integrity or mission accomplishment. Violated airspace restrictions. Exceeded 5 NMs during en route navigation without the above exceptions. Exceeded ATC course tolerances (4NM airways and 10NM general navigation).

**Area 15, Navigation Systems.** All references to navigation systems refer to actual systems onboard unit aircraft (e.g., INS, GPS, or FMS).

- Q Thorough knowledge of onboard navigation system operating procedures. Effectively used navigation systems to direct the aircraft. Updated system as required. Monitored system including investigating “Check STATUS”, “Check NAV ERR”, etc.

- Q- Navigation systems error greater than 5NM but less than 10 NM from actual or determined position. Demonstrated only a basic knowledge of onboard navigation systems operation. Made minor errors in operation/interpretation of navigation system data. Error operating the FMS with no mission impact.
- U Displayed inadequate knowledge of onboard navigation system procedures. Failed to update or correctly interpret navigation system data. Exceeded Q- tolerances.

**Area 16, Descent/Approach Monitor.**

- Q Monitored aircraft position, approach instructions and primary approach navigation aids. Thoroughly understood instrument approach and missed approach procedures. Ensured terrain clearance during approach or departure by available navigation aids and terminal/area charts (if required).
- Q- Misidentified/misunderstood essential approach and departure instructions. Monitored aircraft position, but did not fully understand approach instructions/procedures. Slow to provide headings, ETAs or other appropriate information at the request of the aircraft commander.
- U Did not ensure terrain clearance during the approach. Exceeded Q- tolerances.

**Area 17, Emergency Equipment.**

- Q Displayed thorough knowledge of location and use of emergency equipment.
- Q- Limited knowledge of location and use of emergency equipment.
- U Displayed unsatisfactory knowledge of emergency equipment.

**Area 18, Emergency Procedures (If observed and not covered during EPE).**

- Q Understood and performed emergency procedures for the navigator according to the flight manual. Assists the crew at the direction of the aircraft commander.
- Q- Correctly analyzed and understood aircraft emergencies. Difficulty performing required procedures to correct the emergency.
- U Failed to analyze and did not understand aircraft emergencies. Could not perform required procedures to correct the emergency.

**Area 19, Manual Gear Extension.** Initial Mission and Initial Instructor Only (N/A for Basic Navigators).

- Q Actions required by the applicable flight manual were accomplished correctly and with no omissions.

- Q- Procedures required by the flight manual/checklists were accomplished with no more than minor discrepancies that did not affect the missions or use of equipment.
- U Incorrect actions or checklist steps not accomplished that resulted in corrective action to successfully extend the landing gear manually.

**Area 20, Manual Flap Extension.** Initial Qualification and Initial Instructor Only.

- Q Actions required by the applicable flight manual were accomplished correctly and with no omissions.
- Q- Procedures required by the flight manual, checklists were accomplished with no more than minor discrepancies that did not affect the missions or use of equipment.
- U Incorrect actions or checklist steps not accomplished correctly, resulting in the need for corrective action to successfully extend the flaps manually.

**Area 21, Formation/Station Keeping (If Observed).** (N/A for Basic Navigators)

- Q Performed navigation duties within prescribed tolerances as lead or wing aircraft formation according to AFI 11-2KC-135V3, Chapter 11 (Pacer CRAG use Chapter 6).
- Q- Completed navigation duties with minor errors that did not affect the mission. Unable to maintain station keeping position or failed to notify lead when a known navigation error occurred.
- U Unable to complete navigation duties and degraded mission effectiveness. Unable to assume lead navigator role. Allowed lead to commit a known navigation error that degraded mission effectiveness.

3.5.3. Mission (Tanker AAR). Not applicable for Basic Navigators.

**Area 22, Tanker Air to Air Refueling (N/A for Basic Navigators).** Commences 10 minutes prior to ARCT/RZ PT and terminates at end AAR point. Conduct an in-flight evaluation of either point parallel or en-route rendezvous. Area 22 includes the Rendezvous and the following subareas (if observed): 22A—Tanker Rendezvous, 22B--Breakaway, 22C--Overrun Procedures, 22D--Tanker AAR Formation and 22E--AAR Track Adherence/Altitude.

**Subarea 22A, Tanker Rendezvous.** Conduct an in-flight evaluation of either point parallel or en-route rendezvous. Verbally evaluate the rendezvous not observed.

- Q Provided headings, airspeeds, and altitude direction in a timely manner to ensure rendezvous success. Performed all checklists and complied with procedures outlined in the flight manual and other governing directives.  
-For Point-Parallel, computed and used turn range and offset to within 2NM compared to the FMS computed turn range and offset for a non-standard day.

-For en-route rendezvous, arrived over RZCP or ARCP within 1 minute of scheduled/adjusted rendezvous control time. Advised the receiver of any required control time adjustments NLT 5 minutes prior to the control time.

- Q- Provided headings, airspeeds and altitude direction throughout the rendezvous but not always in a timely manner. Performed all checklists and complied with procedures outlined in the flight manual and other governing directive with deviations/omissions which did not affect safety of flight.
- For Point-Parallel, computed and used turn range and offset greater than 2NM but less than 4NM compared to the FMS computed turn range and offset for a non-standard day.
- For en-route rendezvous, arrived over RZCP or ARCP greater than 1 minute, but within 2 minutes of scheduled/adjusted rendezvous control time. Slow to advise receiver of required time adjustments potentially jeopardizing the rendezvous.
- U Failed to provide heading, airspeed or altitude direction. Had deviations or omissions that affected flight safety or jeopardized completion of successful rendezvous. Exceeded Q- tolerances. ALTITUDE Control - Failed to crosscheck, if applicable, A/R altitude (hot armament check, if required). Directed final turn toward receiver with unknown altitude separation.

**Subarea 22B, Tanker Breakaway.** Ensure correct response according ATP-56.

3.5.4. Mission (Receiver AAR). (N/A for Basic Navigators).

**Area 23, Receiver Air to Air Refueling.** Commences 10-minutes prior to ARCT/RZ PT and terminates at end ARR point. Evaluate a Point Parallel or En route Rendezvous (one required); verbally evaluate the alternative rendezvous.

**Subarea 23A, Receiver Rendezvous.** Include subareas: 24C--AAR Track Adherence/Altitude and 24D--Receiver AAR Formation, if observed.

- Q Rendezvous – Point Parallel –Maintained AAR track after ARIP not more than 3NM. Directed radar closure to in-trail position under IFR conditions not more than 1 NM (N/A Pacer CRAG).
- Rendezvous – En route – Arrived over RZ PT or ARCP (as coordinated at 15 minutes prior Tanker/Receiver radio call) less than 1 minute. Directed radar closure to in-trail position under IFR conditions not more than 1 NM (N/A Pacer CRAG).
- Q- Rendezvous - Point Parallel – AAR track after ARIP more than 3NM but less than 6NM. Directed radar closure to in-trail under IFR condition greater than 1 NM without mission degrade (pilot visual with tanker).
- Rendezvous - En route - Arrived over RZ PT or ARCP greater than 1 minute but less than 2 minutes and failed to advise receiver of timing delay. Directed radar closure to in-trail under IFR condition greater than 1 NM without mission degrade (pilot visual with tanker).

U Exceed Q- tolerances. Unable to direct radar closure to tanker with mission degrade and missed rendezvous.

**Subarea 23B, Receiver Breakaway Procedures.** Insure correct response.

3.5.5. Instructor.

**Area 24, Instructor Responsibility.**

**Subarea 24A, Instructor Ability (Critical).**

Q Demonstrated the ability to communicate effectively. Provided appropriate guidance when necessary. Planned ahead and made timely decisions. Identified and corrected potentially unsafe maneuvers/situations.

U Unable to effectively communicate or provide timely feedback 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.

**Subarea 24B, Student Briefing/Critique (Critical). (see Table 4.1. and Table 4.2.)**

Q Briefings were well organized, accurate, and thorough. Reviewed student's present level of training and defined mission events to be performed. During the critique, demonstrated an effective ability 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.

U Briefings were marginal or non-existent. Did not review student's past performance. Failed to adequately critique student or analyze the mission. Training grade did not reflect actual performance of student. Overlooked or omitted major discrepancies. Incomplete pre-briefing of student's next mission, if required.

## Chapter 4

### BOOM OPERATOR EVALUATIONS

**4.1. General.** This chapter standardizes initial, periodic, qualification, instructor, and re-qualification evaluations.

**4.2. Qualification/Mission Evaluations.**

4.2.1. Initial: Include all areas under GENERAL, QUALIFICATION, and MISSION (Tanker AAR). Area 20B, AAR Boom-to-Drogue Adapter (BDA) will not be evaluated at KC-135 FTU. Upon successful completion, the AF Form 8 will indicate Crew Position as "MB". Use FB only when area 19, Cargo Loading was not evaluated and include the appropriate restriction on AF Form 8.

4.2.2. Periodic: Evaluate all areas under GENERAL, QUALIFICATION, and MISSION (Tanker AAR).

4.2.3. Evaluator note. Receiver aircraft must be equipped with a boom receptacle. One normal contact must be evaluated in-flight. In addition, a TMO contact and a practice emergency separation will be evaluated in-flight but may be verbally evaluated as a last resort. EXCEPTION: During an initial qualification evaluation these procedures will not be verbally evaluated.

**4.3. Additional Mission Evaluations.**

4.3.1. Cargo Loading.

4.3.1.1. Normally, the initial cargo evaluation is accomplished in conjunction with qualification evaluation. In this case, the initial qualification evaluation will include cargo except as noted in the approved initial qualification course syllabus. For all other initial cargo qualifications, an actual or static load must be accomplished.

4.3.1.2. For initial qualification include all areas in GENERAL and MISSION (Cargo).

4.3.1.3. Conduct an initial mission evaluation for unqualified boom operators or for boom operators who were only certified to carry cargo.

4.3.1.4. Periodic. Recurring cargo evaluations should normally be conducted under actual conditions (e.g., AMC channel, SAAM, etc.). If necessary, this evaluation may be evaluated verbally or under static conditions.

4.3.1.5. When verbally evaluated, the flight examiner must present a scenario that reveals the examinee's cargo loading proficiency/capability to meet the unit's assigned requirements to ensure the crewmember can safely accomplish the cargo mission under actual conditions.

4.3.1.6. Actual/static on-load or off-loads satisfies the requirements for an evaluation.

4.3.1.7. All evaluations must include manual applied restraint and weight and balance calculations. When operations do not include hazardous material, evaluators must be prepared to verbally evaluate this area.

4.3.1.8. Document results of actual, static, or verbal cargo evaluations with a description of the cargo evaluation in the COMMENTS section of the AF Forms 8.

4.3.1.9. The flight examiner will assign a MSN (Cargo) Eval grade (1, 2, or 3) in the Qualification Flight Phase block of AF Form 8 and the date the evaluation was completed.

4.3.2. Difference Evaluations. Unless specified otherwise, boom operators do not require a flight evaluation to obtain qualification in a different series KC-135.

**4.4. Instructor Evaluations.** The flight examiner will place particular emphasis on the examinee's ability to recognize student difficulties and provide timely, effective, corrective action. Flight examiners will exercise sound judgment to ensure the explanations/demonstrations do not distract the examinee's attention or disrupt mission objectives.

4.4.1. Initial instructor evaluations. Will be conducted with the examinee instructing a student boom operator or boom operator acting as a student IAW AFI 11-202V2, Paragraph **5.2.1.4.1**. (AETC administered instructor evaluations may be conducted with an unqualified student boom operator or the evaluator acting as the student). Initial instructor evaluations will include (as a minimum) all items under GENERAL, QUALIFICATION, the boom AAR portion of MISSION (Tanker AAR), and INSTRUCTOR. **NOTE:** Boom Operators, who desire to realign the QUAL/MSN evaluation during the initial instructor evaluation will complete (demonstrate) all required areas/subareas in QUALIFICATION, MISSION (Tanker AAR), and INSTRUCTOR, and complete requisite written examinations.

4.4.2. Administer periodic instructor evaluations in conjunction with QUAL/MSN evaluation. Instructor Boom Operators will perform all required areas/subareas.

4.4.3. Instructors may receive periodic instructor evaluation credit while performing actual student training provided all minimum requirements identified in Paragraph **4.2.2** are instructed and the evaluatee demonstrates an actual air to air refueling contact(s) to the student.

4.4.4. KC-135 boom operator initial qualification and initial instructor evaluations require accomplishment of landing gear alternate extension and main flap manual operation procedures (see paragraph **1.911**). For initial instructor evaluations, this requirement may be demonstrated to a student or evaluator boom operator.

**4.5. Emergency Procedures Evaluations (EPE).** Unit determines EPE requirements. Conduct the EPE normally as a ground evaluation before the in-flight evaluation portion of evaluation. Use one-on-one discussions, an ATD (MAJCOM specified), or on-aircraft evaluation methods to conduct the EPE. The EPE should cover a cross section of aircraft systems. Examinees should be able to demonstrate an understanding of aircraft systems in emergency scenarios. The following operations/procedures may be evaluated; emergency ditching/egress, 20-man life raft, escape slide, manual gear/flap extension, manual boom hoist, AAR procedures, APU procedures, manual form F, locked ruddervators or any coordinated topic for instruction. Include situations during takeoff/climb-out, cruise, and approach to landing phases. The EPE may also include emergency egress, Aircrew Flight Equipment support equipment, and FCIF and/or special interest identified EPE topics. This list is not all-inclusive and evaluators may modify them as required.

#### 4.6. Additional Information.

4.6.1. Boom operator flight examiners will not conduct evaluations when scheduled as primary aircrew members.

4.6.2. The KC-135 Boom Operator Partial Task Trainer (BOPTT) may be used for additional training and recheck in area(s) involving normal, abnormal, emergency, breakaway or tanker manual operation procedures. The BOPTT will not be used for rechecks of actual contacts or boom control.

#### 4.7. Boom Operator Grading Criteria.

4.7.1. General.

##### Area 1, Directives and Publications.

- Q Possessed a high level of knowledge of all applicable aircraft publications and procedures and understood how to apply this knowledge to enhance mission accomplishment. Publications were current, properly posted, and contained no discrepancies or only minor annotation or filing discrepancies.
- Q- Unsure of some directives but could locate information in appropriate publications. Publications were current but improperly posted, or were missing current pages or supplements.
- U Unaware of established procedures and/or could not locate them in the appropriate publication in a timely manner. Publications were not current and in such condition that they were unusable for effective accomplishment of any phase of aircraft operation.

**Area 2, Mission Preparation/Planning.** Includes aircraft weight and balance computations (tolerances will not exceed grading criteria for Area 15, Weight and Balance).

- Q Planned Weight and Balance containing all information required by the flight manual, without omissions, discrepancies or contained only minor discrepancies, without omission in required information. Uncorrected Weight and Balance computation errors did not exceed criteria from Area 18. Read (initialed, if required) for all items in FCIF. Completed/obtained all applicable forms. Complied with all local directives. Attended all required briefings.
- Q- Same as above except for minor deviations or omissions which did not impair mission effectiveness. Did not fully comply with local directives, but did not detract from safety.
- U Planned Weight and Balance contained omissions and /or discrepancies in information required by the flight manual, which resulted in unusable weight and balance data. Computations exceeded the Q- tolerances from Area 18. FCIF was not reviewed (initialed, if required). Failed to attend required briefings. Failed to obtain/complete all applicable forms, or made major errors or omissions. Did not obtain adequate mission information. Failed to comply with local directives.

**Area 3, Use of Checklist.** This area includes completion of all formal checklist procedures performed to complete the mission. *NOTE.* Deviations from checklist order are approved for CRM, equipment malfunctions, or equipment limitations as long as it is understood why each step is performed and why it occurs in a certain sequence. Coordination with the evaluator is required.

- Q Procedures and checklist items required by flight manual and applicable directives were accomplished in a thorough and proficient manner.
- Q- Procedures and checklist items required by flight manuals and applicable directives were accomplished with omission, deviation, or error, which detracted from the overall efficient conduct of the mission. Performance was the minimum acceptable.
- U Procedures or checklist items required by flight manual and applicable directives were accomplished with omission, deviation, or error which did, or could adversely affect the successful accomplishment of the mission or task.

**Area 4, Safety Consciousness (Critical).**

- Q Aware of and complied with all safety factors required for safe aircraft operation and mission accomplishment.
- U Not aware of or did not comply with all safety factors required for safe aircraft operation or mission accomplishment. Operated aircraft or equipment in a dangerous manner.

**Area 5, Judgment/Compliance (Critical).**

- Q Prepared and completed mission in compliance with existing regulations and directives. Demonstrated knowledge of operating procedures and restrictions. Decisions were logical and did not jeopardize or complicate the situation.
- 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 which could, or actually did jeopardize safety or successful mission completion. Consistently made poor decisions or made a major error in judgment. Flight objectives were not attained due to poor decision.

**Area 6, Crew Coordination/Crew Resource Management (CRM).** Use AFI 11-290, *Cockpit/Crew Resource Management Training Program*, and AF Form 4031, **CRM Skills Criteria Training/Evaluation**, as a reference.

- Q Effectively coordinated with other aircrew members throughout the assigned mission. Demonstrated knowledge of other crewmembers' duties and responsibilities. Effectively applied CRM skills throughout the mission.

- Q- Crew coordination adequate to accomplish mission. Demonstrated limited knowledge of other crewmembers' duties and responsibilities.
- U Poor crew coordination or unsatisfactory knowledge of other crewmembers' duties and responsibilities negatively affected mission accomplishment or safety of flight.

#### **Area 7, Communication Procedures.**

- Q Displayed a satisfactory knowledge of, and compliance with, correct communication procedures. Transmissions were concise and used proper terminology. Accomplished required calls and acknowledged transmissions in a manner, which enhanced mission effectiveness.
- Q- Displayed adequate communication procedures, but was slow or not concise in making transmissions. Transmissions contained erroneous information or included non-standard terminology. Mission effectiveness was not jeopardized.
- U Incorrect procedures or poor performance caused confusion and jeopardized mission accomplishment. Omitted required transmissions or transmitted erroneous information.

#### **Area 8, Aircrew Flight Equipment Support Systems/Egress.**

- Q Displayed thorough knowledge of location and use of Aircrew Flight Equipment systems and equipment. Demonstrated and emphasized the proper operating procedures used to operate aircraft egress devices such as doors, windows, hatches, slide, rafts, and escape ropes, if used.
- Q- Limited knowledge of location and use of Aircrew Flight Equipment support systems and equipment. Unsure of the proper operating procedures used to operate some of the aircraft egress devices, if used.
- U Displayed unsatisfactory knowledge of location and use of Aircrew Flight Equipment support systems and equipment. Unable to properly operate aircraft egress devices, if used.

#### **Area 9, Knowledge/Completion of Forms.**

- Q All required forms were complete, accurate, readable, accomplished on time and IAW applicable directives. Related an accurate description of significant events to applicable agencies (Safety, Maintenance, etc.).
- Q- Minor errors on forms that did not affect conduct of the mission. Incorrectly or incompletely reported some information due to minor errors, omissions, and/or deviations.

- U Did not accomplish required forms. Omitted or incorrectly reported significant information due to major errors, omissions, and/or deviations.

**Area 10, Airmanship/Situational Awareness.**

- Q Executed the assigned mission in a timely, efficient manner. Demonstrated strict professional flight and crew discipline throughout all phases of flight. Conducted the flight with a sense of understanding and comprehension.
- Q- Untimely or inappropriate decisions degraded or prevented accomplishment of a portion of the mission. Resources were not always effectively used to the point that specific mission objectives were not achieved.
- U Decisions, or lack thereof, resulted in failure to accomplish the assigned mission. Failed to exhibit strict flight and crew discipline.

4.7.2. Qualification.

**Area 11, Ground Operation.** This area includes all activity up to initiation of STARTING ENGINES AND BEFORE TAXI checklist.

- Q Complied with established preflight requirements. Accurately determined readiness of aircraft for flight. Completed all system pre-flight inspections IAW flight manual.
- Q- Same as above except for minor procedural deviations that did not detract from mission effectiveness.
- U Errors directly contributed to a late takeoff that degraded the mission. Failed to accurately determine readiness for flight. Failed to pre-flight a critical component or could not conduct a satisfactory pre-flight inspection.

**Area 12, Pre-takeoff, Climb, and Cruise.** Pre-takeoff procedures include all activity beginning with STARTING ENGINES and BEFORE TAXI checklist. Climb procedures include all activity of AFTER TAKEOFF – CLIMB checklist to cruise. Cruise procedures include all duties not specifically covered in other areas.

- Q Executed the assigned mission in a timely, efficient manner. Demonstrated strict professional flight and crew discipline. Conducted the flight with a sense of understanding and comprehension.
- Q- Untimely or inappropriate decisions degraded or prevented accomplishment of a portion of the mission. Resources were not always effectively used to accomplish mission objectives.
- U Decisions resulted in failure to accomplish the assigned mission. Failed to exhibit strict flight and crew discipline.

**Area 13, Systems Operations/ Knowledge/Limitations.**

- Q Demonstrated/explained a complete knowledge of aircraft systems operations/limitations and proper procedural use of systems with minimal reference to flight manual/available aids.
- Q- Marginal knowledge of aircraft systems operations and limitations in some areas. Used inappropriate technique instead of established procedure. Required moderate references to flight manual/available aids to differentiate between procedure and technique.
- U Unsatisfactory systems knowledge. Unable to demonstrate/explain the proper procedures for aircraft system operations. Lack of systems knowledge that could have resulted in unsafe operation of or damage to equipment.

**Area 14, Abnormal/Emergency Procedures.** Boom operators will be graded on their initial response and actions taken to any actual emergency/abnormal conditions that occurs either in-flight or on the ground during the evaluation.

- Q Operated within prescribed limits and correctly diagnosed problems. Performed/explained proper corrective action for each type of malfunction or abnormal condition. Effectively used available aids.
- Q- Operated within prescribed limits but slow to analyze problems or apply proper corrective actions. Did not effectively use checklist and/or available aids.
- U Exceeded limitations. Unable or failed to analyze problem or take proper corrective action. Did not use checklist and/or available aids.

**Area 15, Weight and Balance.**

- |    |         |                        |           |
|----|---------|------------------------|-----------|
| Q  | Weight: | Error not in excess of | 2,500 lbs |
|    | CG:     | Error not in excess of | 1% MAC.   |
| Q- | Weight: | Error exceeded         | 2,500 lbs |
|    | CG:     | Error exceeded         | 1% MAC    |
| U  | Weight: | Error of more than     | 3,500 lbs |
|    | CG:     | Error of more than     | 1.5% MAC. |

NOTE:

*I:* Consider total number of errors even if no tolerances were exceeded.

**Area 16, Passenger Handling** (if observed, verbal).

- Q Demonstrated a thorough knowledge of required passenger handling normal/emergency procedures and equipment as outlined in applicable guidance. Passengers briefing was clear, concise, and accurate.

- Q- Demonstrated a limited knowledge of required passenger handling, and related emergency procedures and equipment as outlined in applicable guidance. Minor errors or omissions were made in procedures which did/could detract from the overall efficient conduct of the mission or the comfort and control of the passenger(s). Passenger briefing was accomplished with minor omission or errors.
- U Demonstrated an unsatisfactory knowledge of required passenger handling or related emergency procedures and equipment as outlined in applicable guidance. Procedures were not complied with which jeopardized passenger safety or control. Passenger briefing was unclear and/or ineffective.

**Area 17, Manual Gear Extension.** Initial Qualification and Initial Instructor Only.

- Q Actions required by the applicable flight manual were accomplished correctly and with no omissions.
- Q- Procedures required by the flight manual/checklists were accomplished with no more than minor discrepancies that did not affect the missions or use of equipment.
- U Incorrect actions or checklist steps not accomplished that resulted in corrective action to successfully extend the landing gear manually.

**Area 18, Manual Flap Extension.** Initial Qualification and Initial Instructor Only.

- Q Actions required by the applicable flight manual were accomplished correctly and with no omissions.
- Q- Procedures required by the flight manual/checklists were accomplished with no more than minor discrepancies that did not affect the missions or use of equipment.
- U Incorrect actions or checklist steps not accomplished correctly, that resulted in the need for corrective action to successfully extend the flaps manually.

4.7.3. Instructor.

**Area 19, Instructor Ability.** (Critical)

- Q Demonstrated the ability to communicate effectively. Provided appropriate guidance when necessary. Planned ahead and made timely decisions. Identified and corrected potentially unsafe situations.
- U Unable to effectively communicate or provide timely feedback to the student. Did not provide corrective action when necessary. Did not plan ahead or anticipate student problems. Did not identify unsafe situations in a timely manner. Made little or no attempt to instruct.

**Subarea 19A, Demonstration of Knowledge** (Critical).

- Q Effectively demonstrated procedures and techniques. Thorough knowledge of applicable aircraft systems, procedures, publications, and directives.
- U Did not demonstrate correct procedure or techniques. Insufficient depth of knowledge about applicable aircraft systems, procedures, and/or proper source material.

**Subarea 19B, Student Briefing/Critique (Critical).** Use criteria in Table 4.1. and Table 4.2

**Table 4.1. Student Briefing Factors.**

GRADING FACTOR	QUALIFIED	UNQUALIFIED
Organization	Briefings were well organized, accurate, and thorough. Reviewed student's present level of training and defined mission events to be performed Covers mission sequence of events to assure the student understands what is expected.	Did not review the students past performance. Briefings were sketchy, out of sequence, incomplete. Failed to adequately critique student or analyze the mission. Training grade did not reflect actual performance of student. Overlooked or omitted major discrepancies. Student was confused and did not understand what was expected.
Mission Objective	Covered in general	Vague
How Objective Will Be Achieved	Sufficient detail	Vague
Description of Activity to be Accomplished	Sufficient for understanding	Incomplete, rambling
Purpose of Each Type Activity Scheduled	Adequately explained	Omitted
Explanation of Peculiar Aircraft Procedure or Local Operating Instructions	Adequate	Omitted
Use of Standard Terminology	Minor deviations	Rarely used
Cultivate Student Confidence	Sufficient effort	Ineffective
Arouse Student Interest	Effective	Ineffective

**Table 4.2. Student Critique Factors.**

GRADING FACTOR	QUALIFIED	UNQUALIFIED
Data Collection	Adequate for mission reconstruction	Incomplete or irrelevant
Analysis of Discrepancies	Correct and generally	Incorrect

	complete	
Referencing Discrepancies	Correct	Incorrect and/or Not up to date
Organization: Chronologically or by Performance area	Logically developed	Given very little consideration
Annotations/Note Taking	Legible	Illegible
Publications	Available if required to support presentation	Not available to support presentation
Corrective Actions/Recommended Additional Training	Applied correct procedures and/or recommended correct/adequate additional training to correct deficiencies	No corrective actions, additional training or personal opinion given; unable to reference additional study areas from required flight manuals or instructions
Use of Grading Criteria	Correct grade was awarded IAW applicable Instructions, Master Training List (MTL), Evaluation Standards Document (ESD), or Formal School Syllabus	Awarded incorrect grade which affected overall status or performance rating not IAW established standards
Arouse Student Interest	Effective	Ineffective

#### 4.7.4. Mission (Tanker AAR).

#### Area 20, MISSION (Tanker AAR)

**Subarea 20A, AAR (Boom).** Includes all activity from PREPARATION FOR AIR REFUELING to completion of the POST AIR REFUELING CHECKLIST. Coordinated air to air refueling breakaway procedures will be initiated with the receiver within the air to air refueling envelope. An actual breakaway satisfies this requirement regardless of receiver's position. Except for initial qualification evaluations and only as a last resort, tanker manual operation and breakaway procedure demonstrations may be verbally explained and accomplished without a receiver.

- Q Demonstrated a satisfactory knowledge of procedures and equipment. Complied with directives. Coordinated with tanker and receiver pilots. Boom control was smooth and contacts were effective. Monitored receiver closely and gave corrections as necessary. Used proper procedures and techniques that would not jeopardize mission or safety.
- Q- Same as above except for minor deviations which did not or would not jeopardize safety or mission effectiveness. Boom control was slightly erratic resulting in contacts being delayed.
- U Failed to accomplish required checks. Boom control was erratic, and/or technique used in attempting contacts resulted in delays to such extent that fuel could not be offloaded

within the time available. Inadequate knowledge, procedures, or techniques jeopardized safety of flight.

**Subarea 20B, AAR (Boom-to-Drogue Adapter (BDA)).** If observed, else verbal. (N/A FTU)

- Q Demonstrated a satisfactory knowledge of procedures and equipment for the BDA. Complied with directives. Coordinated with tanker and receiver pilots. Monitored receiver closely and gave corrections as necessary. Used proper procedures and techniques that would not jeopardize mission or safety.
- Q- Same as above except for minor deviations which did not or would not jeopardize safety or mission effectiveness.
- U Failed to accomplish required checks. Inadequate knowledge, procedures, or techniques jeopardized safety of flight.

**Area 21, AAR (MPRS).** If observed, else verbal if MPRS certified. (N/A FTU)

- Q Demonstrated a satisfactory knowledge of MPRS procedures and equipment. Complied with directives. Coordinated with tanker and receiver pilots. Monitored receiver closely and gave corrections as necessary. Used proper procedures and techniques that would not jeopardize mission or safety.
- Q- Same as above except for minor deviations which did not or would not jeopardize safety or mission effectiveness.
- U Failed to accomplish required checks. Inadequate knowledge, procedures, or techniques jeopardized safety of flight.

4.7.5. Mission (Cargo).

**Area 22, Cargo Loading and Unloading** (See Requirements at Paragraph 4.3.)

- Q Demonstrated a thorough knowledge of required procedures as outlined in the flight manual and applicable directives. Load planning was accomplished without errors or omissions. Required briefings were clear, concise and accurate. Coordinated with air terminal operation personnel (or equivalent) on cargo loading/unloading matters.
- Q- Demonstrated a limited knowledge of required procedures as outlined in the flight manual and applicable directives. Procedures were accomplished with errors or deviations which did/would not detract from the cargo loading/unloading operation or mission. Load planning contained minor errors or omissions without exceeding established limits. Required briefings contained minor errors or omissions.
- U Demonstrated an unsatisfactory knowledge of required procedures as outlined in the flight manuals and applicable manuals. Procedures were not complied with which jeopardized mission accomplishment or the safety of the cargo loading/unloading

operation. Required briefings were unclear and/or ineffective causing confusion. Failed to coordinate with air terminal operation personnel (or equivalent) on cargo loading/unloading matters. Load planning contained major errors or omissions and/or exceeded limits.

4.7.6. Forms Adopted.

AF Form 8, *Certificate of Aircrew Qualification*  
AF Form 847, *Recommendation for Change of Publication*  
AF Form 942, *Record of Evaluation*  
AF Form 3578, *Tanker Activity Report*  
AF Form 3862, *Flight Evaluation Worksheet*  
AF Form 4100, *KC-135 Load Planning Worksheet*  
AFTO Form 781, *ARMS Aircrew/Mission Flight Data Document*  
DD Form 175, *Military Flight Plan*  
DD Form 1801, *DoD International Flight Plan*  
DoD Form 365-4, *Weight and Balance Clearance Form F*

4.7.7. Forms Prescribed. No forms are prescribed by this publication.

PHILIP M. BREEDLOVE, Lt Gen, USAF  
DCS, Operations, Plans and Requirements

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

AFPD 11-2, Aircraft Rules and Procedures 14 January 2005  
AFI 11-202V1, *Aircrew Training* 17 May 2007  
AFI 11-202V2, Aircrew Standardization/Evaluation Program 08 December 2006  
AFI 11-2KC-135V1, *C/KC-135 Aircrew Training* 8 November 2006  
AFI 11-2KC-135V3, C/KC-135 Operations Procedures 01 July 2000  
AFI 11-215, Flight Manuals Program (FMP) 22 December 2008  
AFI 11-218, Aircraft Operation and Movement on the Ground 11 May 2005  
AFI 11-290, Cockpit/Crew Resource Management Training Program 11 April 2001  
AFI 11-401, *Flight Management* 7 March 2007  
AFMAN 11-210, Instrument Refresher Course Program 3 February 2005  
AFMAN 36-2236, Guidebook for Air Force Instructors 12 November 2003  
AFTTP 3-1, Employment and Tactics 2 Nov 2008  
ATP 56 (B), *Air-To-Air Refueling* 14 December 2008

***Abbreviations and Acronyms***

**AAR**—Air to air refueling  
**ARIP**—Air to air refueling Initial Point  
**ARCT**—Air to air refueling Control Time  
**ATC**—Air Traffic Control  
**ATD**—Aircrew Training Device  
**ATS**—Aircrew Training Simulator  
**BDA**—Boom-to-Drogue Adapter  
**BOT**—Boom Operator Trainer  
**BOPTT**—Boom Operator Partial Task Trainer  
**CG**—Center of Gravity  
**CP**—Copilot  
**EFTOC**—Engine Failure Takeoff Continued  
**EPE**—Emergency Procedures Evaluation  
**ETA**—Estimated Time of Arrival  
**FCIF**—Flight Crew Information File

**FEF**—Flight Evaluation File  
**FMS**—Flight Management System  
**GA**—Go Around  
**GPS**—Global Positioning System  
**IP**—Instructor Pilot  
**KIAS**—Knots Indicated Airspeed  
**LOP**—Line of Position  
**MP**—Mobility Pilot  
**MQF**—Master Question File  
**MPRS**—Multi-point Refueling System  
**OFT**—Operational Flight Trainer  
**PAR**—Precision Approach Radar  
**PC**—Pacer CRAG  
**RQ**—Requalification  
**RZ PT**—Rendezvous Point  
**SOC**—Senior Officer Course  
**TAD**—Tactical Arrival and Departures

## Attachment 2

## KC-135 PILOT FLIGHT EVALUATION WORKSHEET EXAMPLE

AREAS/SUBAREAS	Q	Q-	U	T	REMARKS
<b>GENERAL</b>					
1. Directives and Publications					
2. Mission Preparation/Planning					
3. Use of Checklists					
4. Safety Consciousness (Critical)					
5. Judgment/Compliance (Critical)					
6. Crew Coordination/CRM					
7. Communication Procedures					
8. Aircrew Flight Equipment Systems/Egress					
9. Knowledge/Completion of Forms					
10. Airmanship/Situational Awareness					
<b>QUALIFICATION</b>					
11. Takeoff					
12. VFR Pattern (WX Permitting)					
13. Landings					
13A. Normal Landing (50 Flap)					
13B. Partial Flap (30 or 40 Flap, N/A RSQ)					
13C. Touch-and-Go (N/A RSQ)					
13D. Right Seat					
13E. Left Seat (N/A RSQ)					
14. Ldg/Roll, Brkg, (N/A RSQ)					
15. All Engine Go Around (RSQ Only)					
16. Simulated Engine Out Ops (N/A RSQ)					
16A. Engine Fire/Failure During Flight (Takeoff , Cruise, Descent)					
16B. Engine Out Approach					
16C. Engine Out GA					
16D. Engine Out Landing					
17. Boldface Emergency Procedures (Critical)					
18. Other Emergency Procedures					
19. Systems					

Ops/Knowledge/Limitations					
<b>INSTRUMENT</b>					
20. Instrument Departure /SID					
21. En Route Navigation/FMS					
22. Holding					
23. Use of NAVAIDS					
24. Descent/Arrival					
25. Precision Approach (one required)					
25A. PAR					
25B. ILS					
26. Non Precision Approaches (one required)					
26A. TACAN					
26B. Localizer (LOC)/VOR					
26C. ASR					
26D. GPS/RNAV					
27. Circling Appr (If avail, else verb)					
28. Missed Approach					

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AREAS/SUBAREAS	Q	Q-	U	T	REMARKS
<b>INSTRUCTOR</b>					
29. Instructor Responsibility					
29A. Instructor Ability					
29B. Student Briefing/Critique					
<b>MISSION</b>					
30. Ground Operations/Taxi					
31. Takeoff					
32. Radar Ops/WX Avoid/Windshear					
33. Fuel Conservation					
34. Landing (One required)					
35. Tanker AAR					
35A. Rendezvous					
35B. Platform Control					
35C. Breakaway					
35D. Overrun Procedures					
36. Formation (if observed)					
36A. Lead, Departure, & Joinup					
36B. Enroute, Position Chg, Breakup					

36C. AAR Formation					
<b>MISSION (ARR)</b>					
37. Receiver AAR					
37A. Rendezvous					
37B. Closure					
37C. AAR Position/Control					
37D. Overrun Procedures					
37E. Breakaway					
37F. IP Right Seat AAR Limit Demo					
38. Tactics (if observed)					
39. Threat Avoidance (if observed)					
40. Tactical Arrival (if observed)					
<b>SPECIAL INTEREST ITEMS (SIIs)</b>					

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## Attachment 3

## KC-135 NAVIGATOR FLIGHT EVALUATION WORKSHEET EXAMPLE

AREAS/SUBAREAS	Q	Q-	U	T	REMARKS
<b>GENERAL</b>					
1. Directives and Publications					
2. Mission Preparation/Planning					
2A. General					
2B. Flight Planning					
3. Use of Checklists					
4. Safety Consciousness (Critical)					
5. Judgment/Compliance (Critical)					
6. Crew Coordination/CRM					
7. Communication Procedures					
8. Aircrew Flight Equipment Systems/Egress					
9. Knowledge/Completion of Forms					
10. Airmanship/Situational Awareness					
<b>QUALIFICATION</b>					
11. Ground Operations / Taxi					
12. Departure					
13. Radar Ops/WX Avoid/Windshear					
14. General Navigation and Course Adherence					
15. Navigation Systems					
16. Descent/Approach Monitor					
17. Emergency Equipment					
18. Emergency Procedures (if observed)					
19. Manual Gear Extension					
20. Manual Flap Extension					
21. Formation/Station Keeping (if observed)					
<b>MISSION (Tanker AAR) – N/A</b> Basic Nav					
22 Tanker AAR					
22A. Rendezvous (PP and Enroute)					
22B. Breakaway					
22C. Overrun Procedures					

22D. Tanker AAR Formation (if observed)					
22E. AAR Track Adherence/Altitude					
<b>MISSION (Receiver AAR) – N/A Basic Nav</b>					
23. Receiver AAR					
23A. Rendezvous (PP and Enroute)					
23B. Breakaway					
24. Instructor Responsibility					
24A. Instructor Ability (Critical)					
24B. Student Briefing/Critique (Critical)					
<b>SPECIAL INTEREST ITEMS (SIIs)</b>					

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## Attachment 4

## KC-135 BOOM OPERATOR FLIGHT EVALUATION WORKSHEET EXAMPLE

AREAS/SUBAREAS	Q	Q-	U	T	REMARKS
<b>GENERAL</b>					
1. Directives and Publications					
2. Mission Preparation/Planning					
3. Use of Checklists					
4. Safety Consciousness (Critical)					
5. Judgment/Compliance (Critical)					
6. Crew Coordination/CRM					
7. Communication Procedures					
8. Aircrew Flight Equipment Systems/Egress					
9. Knowledge/Completion of Forms					
10. Airmanship/Situational Awareness					
<b>QUALIFICATION</b>					
11. Ground Operation					
12. Pre-takeoff, Climb, & Cruise					
13. System Ops/Knowledge/Limitations					
14. Abnormal/Emer Procedures					
15. Weight and Balance					
16. Pax Handling (if observed)					
17. Manual Gear Extension					
18. Manual Flap Extension					
<b>INSTRUCTOR</b>					
19. Instructor Ability (Critical)					
19A. Demonstration of Knowledge					
19B. Student Briefing/Critique					
<b>MISSION (Tanker AAR)</b>					
20. Tanker AAR					
20A. AAR (Boom)					
20B. AAR (BDA) (if observed, else verbal) N/A FTU					
<b>MISSION (MPRS)</b>					
21. AAR (MPRS) (if observed, else verbal if certified) N/A FTU					
<b>MISSION (Cargo)</b>					
22. Cargo Ldg/Unldg					
<b>SPECIAL INTEREST ITEMS (SIIs)</b>					

