

1 OCTOBER 1998

Flying Operations

HC-130--AIRCREW EVALUATION CRITERIA



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OPR: HQ ACC/DOTV
(CMSgt Joseph R. Ochranek)
Supersedes MCI 11-C130V2, 17 January 1997
(HC-130 evaluation criteria only!)

Certified by: HQ USAF/XOO
(Brig Gen Michael S. Kudlacz)
Pages: 60
Distribution: F

This volume implements AFPD 11-2, *Aircraft Rules and Procedures*; AFPD 11-4, *Aviation Service*; and AFI 11-202V2, *Aircrew Standardization/Evaluation Program*. It applies to all HC-130 units. MAJCOMs/DRUs/FOAs are to forward proposed MAJCOM/DRU/FOA-level supplements to this volume to HQ USAF/XOOT, through HQ ACC/DOTV, for approval prior to publication IAW AFPD 11-2. Copies of MAJCOM/DRU/FOA-level supplements, after approved and published, will be provided by the issuing MAJCOM/DRU/FOA to HQ USAF/XOOT, HQ ACC/DOTV, and the user MAJCOM/DRU/FOA offices of primary responsibility. Field units below MAJCOM/DRU/FOA level will forward copies of their supplements to this publication to their parent MAJCOM/DRU/FOA office of primary responsibility for post publication review. **NOTE:** The terms Direct Reporting Unit (DRU) and Field Operating Agency (FOA) as used in this paragraph refer only to those DRUs/FOAs that report directly to HQ USAF. Keep supplements current by complying with AFI 33-360V1, *Publications Management Program*. See paragraph 1.2 of this volume for guidance on submitting comments and suggesting improvements to this publication.

The Paperwork Reduction Act of 1974 as amended in 1996 affects this volume. Also, the Air Force Forms Management Program IAW AFI 37-160V8, *The Air Force Publications and Forms Management Program--Developing and Processing Forms*, affects this volume.

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Chapter 1

GENERAL INFORMATION

1.1. General. Conduct all evaluations IAW AFI 11-202V2 and this volume.

1.2. Recommended Changes/Waivers:

1.2.1. Submit recommendations for changes to this volume on AF Form 847, **Recommendation for Change of Publication**, IAW AFI 11-215, *Flight Manuals Program*, to the parent MAJCOM Stan/Eval. Parent MAJCOM Stan/Evals will forward approved recommendations to lead command OPR (HQ ACC/DOTV, 205 Dodd Blvd, Suite 101, Langley AFB VA 23665-2789) for approval. HQ USAF/XO is approval authority for changes to this volume.

1.2.2. Request waivers from the parent MAJCOM through Stan/Eval channels.

1.3. Procedures:

1.3.1. Flight examiners will use the criteria contained in this volume for conducting all flight and emergency procedures evaluations. To ensure standard and objective evaluations, flight examiners will be thoroughly familiar with the prescribed evaluation criteria.

1.3.2. Unless specified, the examinee or flight examiner may fly in any seat that will best enable the examiner to conduct a thorough evaluation.

1.3.3. Prior to flight, the flight examiner will brief the examinee on the purpose and conduct of the evaluation. The examinee will accomplish appropriate flight planning/mission preparation.

1.3.4. Areas indicated with an "R" in **Table 2.1.** through **Table 2.9.** are required for specific evaluations. Flight examiners should evaluate any other areas observed. Required areas are normally evaluated in the aircraft. When it is impossible to evaluate a required area in the aircraft due to equipment malfunctions, operational requirements, scheduling restrictions or weather, it may be evaluated by an alternate method (simulator, procedural trainer or verbal examination) unless otherwise noted. If an alternate method is used to complete the evaluation, document in the Comments portion of the AF Form 8, **Certificate of Aircrew Qualification**. If, in the flight examiner's judgment, a required item cannot be adequately evaluated by an alternate method, complete the evaluation on an additional flight.

1.3.5. Flight examiners will not intentionally fail any equipment during flight evaluations but may deny the use of systems not affecting safety of flight.

1.3.6. The flight examiner will thoroughly critique all aspects of the evaluation. During the critique, the flight examiner will review the overall rating, specific deviations, area grades assigned, and any required additional training.

1.4. Grading Instructions:

1.4.1. Base tolerances for in-flight parameters on conditions of smooth air and a stable aircraft. Do not consider momentary deviations from tolerances, provided the examinee applies prompt corrective action and such deviations do not jeopardize flying safety. Consider cumulative deviations when determining the overall grade.

1.4.2. Under no circumstances will a flight examiner allow the aircraft to slow to below Velocity for Minimum Control Authority (Vmca), regardless of airspeed tolerances listed for specific areas.

1.4.3. Upon completion of the flight, the flight examiner will compare the examinee's performance for each area with the standards provided in this volume and assign an appropriate grade for the area. Derive the overall flight evaluation grade from the area grades based on a composite for the observed events and tasks IAW AFI 11-202V2 and this volume.

1.4.3.1. To the maximum extent possible, flight examiner will use the grading criteria in this volume to determine individual area grades. Due to the subjective wording of some areas, not all situations will be specifically covered; exercise judgment in those cases.

1.4.3.2. Flight examiner judgment will be the determining factor in arriving at the overall grade.

1.5. Unsatisfactory Performance:

1.5.1. If the flight examiner observes an aircrew counterpart jeopardizing safe flight, the examiner will assume the duties of that aircrew member. This does not mean the examiner must assume the examinee's position any time unsatisfactory performance is observed. If the examiner feels the examinee can continue safely with supervision, the examiner is not required to assume the examinee's duties.

1.5.1.1. If the flight examiner assumes the examinee's duties, assign a qualification level 3 as the overall grade.

1.5.2. Evaluators must report deviations/discrepancies within their aircraft/formation from established procedures/directives in any area, regardless of the individual's crew specialty, to the OGV for evaluation and necessary action. If the deviation/discrepancy is found to warrant overall qualification level 3 AF Form 8 documentation, annotate SPOT in the Flight Phase block. The Chief of OGV will sign as the flight examiner. If an evaluator is flying as an instructor or basic crewmember and deviations are observed, report deviations to appropriate individual (no AF Form 8 required).

1.6. Emergency Procedures Evaluations (EPE). Unit flight examiners will conduct EPEs as a requisite to all flight evaluations. The EPE will include areas commensurate with the examinee's qualification. Publish the specifics for these evaluations in the unit supplement to AFI 11-202V2.

1.6.1. The flight examiner may use a simulator, weapon system trainer or aircrew training device, or verbal procedure to complete the EPE.

1.6.2. EPEs should be scenario driven with an emphasis on emergency procedures and systems knowledge. Flight examiners may use one continuous scenario throughout the EPE or different scenarios for each emergency procedure.

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

1.6.3. Include the following items on all pilot and flight engineer EPEs:

1.6.3.1. Include a minimum of two emergency procedures per phase of flight (as a minimum, pre-takeoff, takeoff, en route, approach/landing). Include all Bold Face Procedures.

- 1.6.3.1.1. Emergency Procedures should cover a cross section of aircraft systems such as bleed air, fuel/oil, electrical, engines, avionics, hydraulics, Self Contained Navigation Systems/Inertial Navigation System (SCNS/INS) (if applicable), and propellers. Examinees should be able to demonstrate an understanding of aircraft systems beyond the actual steps required for an emergency procedure.
- 1.6.3.2. Unusual attitude recoveries (pilot only).
- 1.6.3.3. Maximum Effort Takeoff and Landing Data (TOLD)--flight engineer only (if applicable to unit mission).
- 1.6.4. Navigator and loadmaster evaluations will include sufficient in-flight and ground emergencies to the flight examiner's satisfaction. Include all Bold Face Procedures (if applicable).
- 1.6.5. Include the following additional items on EPEs as a requisite for pilot mission evaluations. Tailor mission evaluation scenarios to unit tasking and include areas not normally evaluated in-flight.
 - 1.6.5.1. Defensive systems operation (if configured).
 - 1.6.5.2. Threat interpretation.
 - 1.6.5.3. Evasive action.
- 1.6.6. Place examinees receiving overall EPE unqualified grades in supervised status until recommended additional training and reevaluation are successfully accomplished. Examinees receiving an overall unqualified grade because of an unsatisfactory Bold Face Procedure will not be permitted to fly in their aircrew position until a successful reevaluation is accomplished. For EPEs graded as qualified with additional training, the SEFE will indicate whether to accomplish the additional training before the flight evaluation. Accomplish additional training and reevaluation IAW AFI 11-202V2.

1.7. Examinations:

- 1.7.1. **Qualification Examination (Open Book).** This examination will be derived from all flight manuals and governing command directives. The examination will consist of at least 50 questions. Units may increase the number of questions to provide an indepth evaluation of the examinee's knowledge.
- 1.7.2. **Qualification Examination (Closed Book):**
 - 1.7.2.1. **General Knowledge.** This exam consists of a minimum of 20 questions and includes information applicable to the individual's crew position and the unit's mission.
 - 1.7.2.2. **Bold Face.** This exam must consist of one question concerning each critical action emergency procedure applicable to the individual's specialty. The answer must contain all critical action items in the proper sequence. Verbatim responses are not required; however, answers must clearly state the intended course of action.

Chapter 2

EVALUATION REQUIREMENTS

2.1. General:

2.1.1. All evaluations will follow the guidelines set in AFI 11-202V2, and this volume. **Table 2.1.** through **Table 2.9.** depict required grading areas for all evaluations. Before the Aircraft Commander briefing, the flight examiner will brief the examinee on specific evaluation areas and, if applicable, will inform the aircraft commander of any special requirements. Use criteria in the chapter for the appropriate crew position for evaluations.

2.2. Requirements. This volume requires completion only of those evaluations specified in this chapter or a combination thereof. Special qualifications do not require initial or recurring evaluations; annotate these qualifications on the letter of certification.

2.2.1. Administer aircrew evaluations on any flight that, as scheduled, will accomplish all required items for that evaluation. Mission evaluations should be as realistic as possible with a minimum of simulated events. Do not deviate from peacetime restrictions.

2.2.1.1. Pilot Instrument/Qualification evaluations should include approaches to airfields other than home station or deployed locations, if possible.

2.2.1.2. Mission evaluations for all crew positions should include actual airdrop loads or in-flight refueling, if possible. Navigators, loadmasters, and airborne communications specialists comply with specific guidance in **Chapter 5**, **Chapter 7**, and **Chapter 8** of this volume.

2.3. Currency of Flight Publications. Evaluate all issued publications, to include checklists, for currency and accuracy on all flight evaluations.

2.4. Formal Course Evaluations. Fly syllabus evaluations IAW syllabus mission profile guidelines if stated, or on a mission profile developed from syllabus training objectives. Formal course guidelines may be modified, based on local operating considerations or examiner judgment, to complete the evaluation.

2.4.1. Students graduating from Pilot Mission Qualification Rescue (PMQR), Navigator Mission Qualification Rescue (NMQR), Flight Engineer Mission Qualification Rescue (FEMQR), Loadmaster Mission Qualification Rescue (LMMQR), or Airborne Communication Specialist Mission Qualification Rescue (ACSMQR) at Kirtland AFB with MC-130P/N annotated on the AF Form 8 are also rescue mission qualified in the HC-130P/N.

2.5. Instructor Evaluations. Conduct instructor evaluations IAW AFI 11-202V2, and **Chapter 3** of this volume. Thoroughly evaluate the examinee's instructor knowledge and ability.

2.6. Evaluation Requirements Tables. The following tables depict grading areas for specific crew position evaluations.

Table 2.1. Required Grading Areas (All).

	Note	Grading Areas	
1	1	Safety - Critical	R
2	1	Aircrew Discipline - Critical	R
3	1	Airmanship - Critical	R
4	1	Crew Coordination/Cockpit Resource Management (CRM)	R
5	1	Flight/Mission Planning	R
6	1	Knowledge of Directives	R
7	1	Preflight	R
8	1	Use of Checklist	R
9	1	Forms/Reports/Logs	R
10	1	Personal/Professional Equipment	R
11	1	Emergency Procedures	R
12	1, 2	Briefings	R
13	1	Anti-Hijacking/Aircraft Security	R
14		RESERVED	
15		RESERVED	
Notes:			
1. Applies to all crew positions and all evaluations.			
2. If observed by flight examiner.			

Table 2.2. Instructor Evaluation Grading Areas.

	Notes	Grading Areas	
16	1	Mission Preparation	R
17	1	Instructional Ability	R
18	1	Knowledge of Publications/Procedures	R
19	1	Briefings/Critique	R
20	1	Demonstration of Procedures	R
21		RESERVED	
22		RESERVED	
23		RESERVED	
Note:			
1. Applies to all instructors in all crew positions.			

Table 2.3. Pilot/Copilot Instrument/Qualification Grading Areas.

	Notes	Grading Areas	
24	1,2,5	Pre-Takeoff	
25	1,2	Takeoff	R
26	1,2	Departure	R
27	1,2,5	En route Navigation	
28	1,2	Comm/IFF/SIF	R
29	1,2	Descent/Arrival	R
30	1	Holding/Procedure Turn	R
31	1	Non-Precision Approach	R
32	1	Circling/Side-Step Approach	R
33	1	Precision Approach	R
34	2	VFR Approach/Pattern	R
35	1	Engine-Out Approach	R
36	1,2	100/50 Percent Landing	R
37	2,3	No Flap Landing	R
38	2,4	Touch-and-Go Landing	R
39	1,2,5	Engine-Out Landing	
40	1	Missed Approach/Go-Around	R
41	2	Engine-Out Go-Around	R
42	1,2,5	After Landing/Engine Shutdown	
43	1,2	Bold Face - Critical	R
44	2,5	Reverse Taxi	
45		RESERVED	
46		RESERVED	
Notes:			
1. Applies to instrument evaluations.			
2. Applies to qualification evaluations.			
3. Aircraft commanders/instructors only.			
4. Touch-and-Go aircraft commanders and instructors only.			
5. If observed or used by the flight examiner.			

Table 2.4. Pilot/Copilot Mission Grading Areas.

	Notes	Grading Areas	
47		Pre-Takeoff	R
48		Comm/IFF/SIF	R
49		En route Navigation	R

	Notes	Grading Areas	
50	3	Defensive Systems/Tactics	R
51		Threat Avoidance	R
52		Slowdown	
53		Airdrop Procedures	
54		Escape	
55	1	Tactical Recovery	
56	2	Assault Procedures	R
57	2	Assault Takeoff	R
58	2	Assault Landing	R
59		NVG Usage/Limitations	R
60		Air Refueling/Tanker	R
61	1	MA-1/2 Kit Delivery	
62	1	Parabundle Delivery	
63	1	Freefall Delivery	
64	1	Para-Rescue (PJ) Directed Airdrop	
65		RESERVED	
66		RESERVED	
67		RESERVED	
Notes:			
1. If observed or used by the flight examiner.			
2. May be completed with qualification evaluation.			
3. If configured with Air Defense Systems(ADS).			

Table 2.5. Navigator Qualification Grading Areas.

	Notes	Grading Areas	
68		Flight Plan/Charts	R
69		Fuel Planning	R
70		Departure	R
71		Radio Navigation	R
72		Radar Navigation	R
73		Navigation Systems	R
74	1,2	Deviation Check	R
75		True Airspeed (TAS) Check	R
76		Dead Reckoning (DR)/Rating Of Nav Computers	R
77		RESERVED	
78		RESERVED	

	Notes	Grading Areas	
79		Course and Estimated Time of Arrival (ETA) Tolerance	R
80		Fuel Management/Range Control	R
81		Decent/Approach/Landing	R
82	3	Airborne Radar Approach (ARA)	R
83		Radio Transmission - Usage and Discipline	
84		Emergency Equipment	R
85		RESERVED	
86		RESERVED	
87		RESERVED	
88		RESERVED	
89		RESERVED	
Notes:			
1. If aircraft has dual inertial instead of compasses, only computations will be evaluated.			
2. Exempt for units possessing all aircraft with dual inertial.			
3. Not required if evaluated during mission evaluation.			

Table 2.6. Navigator Mission Grading Areas.

	Notes	Grading Areas	
90		Flight Plan/Airdrop Data/Charts	R
91		Advisories	R
92		Navigation Procedures	R
93	3	Defensive Systems/Tactics/Threat Analysis	R
94		Threat Avoidance	R
95	2	In-flight Airdrop Computation	
96	2	Slowdown	
97	2	Drop zone/Landing zone (DZ/LZ) Acquisition	
98	2	DZ Alignment	
99	1	Time-Over-Target (TOT) - Critical	R
100	2	Airdrop Accuracy - Critical	
101	2	Escape	
102		Night Vision Goggle (NVG) Usage/Limitations	R
103	1	Air Refueling Control Point (ARCP) Time Control - Critical	R
104	4	Airborne Radar Approach (ARA)	R
105	2	Search Data Computations	R
106	2	Search Pattern	R

	Notes	Grading Areas	
107		RESERVED	
108		RESERVED	
109		RESERVED	
Notes:			
1. Evaluate time control on either area 99 or 103, not both.			
2. If used in mission profile or used by the examiner.			
3. If configured with ADS.			
4. Not required if evaluated during the qualification evaluation			

Table 2.7. Flight Engineer Mission/Qualification Grading Areas.

	Notes	Grading Areas	
110		AFTO 781	R
111		Ground Support Equipment	R
112	1	Refuel/Defuel	
113		TOLD Data	R
114		Engine Start	R
115		Taxi	R
116		Takeoff	R
117		En route	R
118		Landing/Engine Shutdown	R
119		Postflight	R
120		Mission Procedures	R
121	1	Assault Takeoff/Landing	
122		NVG Usage/Limitations	R
123		Air Refueling System/Procedures	R
124		Loss of Drogue	R
125		Search and Rescue Operations	R
126		Weight and Balance	
127		Bold Face - Critical	R
128		RESERVED	
129		RESERVED	
130		RESERVED	
Note:			
1. If observed or used by the examiner.			

Table 2.8. Loadmaster Mission/Qualification Grading Areas.

	Notes	Grading Areas	
131	1	Life Support Equipment	R
132	1	Emergency Equipment	R
133	1	Aircraft Configuration	R
134	1	Load Planning/Inspection	
135	1	On/Off Loading procedures	
136	1	Supervisory Abilities	
137	1	Tie Down/Restraint	
138	1,4	Winching Procedures	
139	1	Hazardous Material	
140	1	Aircraft Limitations	R
141	1	Passenger Handling	
142	1	Border Clearance	
143	1	Weight and Balance	R
144	1	Scanner Duties	R
145	1	Engine Running Onload/Offload	
146	1,2	System Knowledge	R
147	2	Airdrop Rigging Procedures	R
148	2,3	Load Inspection/Joint Airdrop Inspection	
149	2	Coordinated Tasks Briefing	R
150	2	Airdrop Knowledge	R
151	2	NVG Usage/Limitations	R
152	2	Air Refueling	R
153	2	Combat Search and Rescue (CSAR)/Search Scanning Procedures	R
154	2	Pyrotechnics	R
155	2	Flare Launcher	R
156		RESERVED	
157		RESERVED	
158		RESERVED	
159		RESERVED	

Notes:

1. Required for qualification evaluations.
2. Required for mission evaluations (as applicable).
3. If observed or used by the examiner.
4. Required only if unit possesses Back-up Aircraft Inventory (BAI) C-130E.

Table 2.9. Airborne Communications Specialist (ACS) Qualification/Mission Grading Areas.

	Notes	Grading Areas	
160		Life Support Equipment	R
161		Handling Classified Material -Critical	R
162		CSAR Communication Support	R
163		Knowledge of Route Communications	R
164		International Civil Aviation Organization (ICAO) Operating Procedures	
165		Military Operating Procedures	R
166	2	Search/Orbit/Intercept Procedures	
167		Authentication Procedures - Critical	R
168		Crypto System Operations	R
169		Crypto Material Requirements	R
170		Frequency Management	R
171		Equipment Troubleshooting	R
172		Knowledge/Operation of Direction Finding (DF) Equipment	
173		Systems Knowledge	R
174		DZ/LZ Communications	
175		NVG Usage/Limitations	R
176		Scanner Duties	R
177		RESERVED	
178		RESERVED	
179		RESERVED	
180		RESERVED	
Note:			
1. If observed or used by the examiner.			

Chapter 3

ALL EVALUATIONS

3.1. General. The criteria which is contained in this chapter applies to all crew positions and all evaluations.

3.2. Objective. The examinee must satisfactorily demonstrate the ability to perform required duties safely and effectively, including the operation of appropriate aircraft systems, IAW with applicable technical orders, instructions, and directives.

3.3. Requirements:

3.3.1. **All Crewmembers.** Evaluate all crewmembers on areas listed in [Table 2.1](#). on all evaluations.

3.3.2. **Instructors.** See [Table 2.2](#). for required evaluation areas.

3.4. General Grading Criteria:

3.4.1. **Area 1--Safety.** Critical:

3.4.1.1. **Q.** Was aware of and complied with all safety factors required for safe aircraft operation and mission accomplishment.

3.4.1.2. **U.** Not aware of or did not comply with all safety factors required for safe aircraft operation or mission accomplishment. Operated the aircraft in a dangerous manner.

3.4.2. **Area 2--Aircrew Discipline.** Critical:

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

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

3.4.3. **Area 3--Airmanship.** Critical:

3.4.3.1. **Q.** Executed the assigned mission in a timely, efficient manner. Demonstrated situational awareness throughout the mission and conducted the flight with a sense of understanding and comprehension.

3.4.3.2. **U.** Decisions or lack thereof resulted in failure to accomplish the assigned mission. Demonstrated poor judgment to the extent that the mission or safety was compromised.

3.4.4. **Area 4--Crew Coordination/Cockpit Resource Management (CRM):**

3.4.4.1. **Q.** Effectively coordinated with other aircrew members throughout the mission. Had effective use of CRM.

3.4.4.2. **Q-.** Crew coordination was limited though adequate to accomplish the mission. CRM was the minimum acceptable.

3.4.4.3. **U.** Poor crew coordination and/or use of CRM that negatively affected mission accomplishment or safety of flight.

3.4.5. Area 5--Flight/Mission Planning:**3.4.5.1. Mission Preparation:**

3.4.5.1.1. **Q.** Checked all factors applicable to flight such as weather, Notice To Airman System (NOTAMS), alternate airfields, flight logs, performance data, fuel requirements, and charts. When required, extracted necessary information from air tasking order/frag. Aware of the available alternatives if unable to complete the flight/mission as planned. Read and initialed for all items in the Flight Crew Information File (FCIF)/Read Files.

3.4.5.1.2. **Q-.** Minor errors or omissions could have detracted from mission effectiveness. Knowledge of performance capabilities or approved operating procedures/rules was limited.

3.4.5.1.3. **U.** Major errors or omissions would have prevented a safe or effective mission. Unsatisfactory knowledge of operating data or procedures. Did not review or initial FCIF.

3.4.5.2. Publications:

3.4.5.2.1. **Q.** Assigned publications were current, contained all supplements/changes and were properly posted.

3.4.5.2.2. **Q-.** Assigned publications contained deficiencies that would not impact flight safety or mission accomplishment.

3.4.5.2.3. **U.** Assigned publications were out dated and/or contained deficiencies that would impact flight safety or mission accomplishment.

3.4.6. Area 6--Knowledge of Directives:

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

3.4.6.2. **Q-.** Minor deviations to established procedures. Unsure of some directives and/or had difficulty locating some information in appropriate publications. Any instances of non-compliance did not jeopardize safety.

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

3.4.7. Area 7--Preflight:

3.4.7.1. **Q.** Completed all systems preflight/inspections IAW tech orders, checklists, and instructions.

3.4.7.2. **Q-.** Minor deviations from established systems pre-flight/inspection. Used individual technique instead of established procedure and was unaware of differences.

3.4.7.3. **U.** Failed to preflight critical component or could not conduct a satisfactory preflight/inspection.

3.4.8. Area 8--Use of Checklist:

3.4.8.1. **Q.** Consistently used the correct checklist and gave the correct response at the appropriate time throughout the mission.

3.4.8.2. **Q-** Checklist responses were untimely and/or crewmember required continual prompting for correct responses.

3.4.8.3. **U.** Used incorrect checklist or consistently omitted checklist items. Was unable to identify the correct checklist to use for a given situation. Did not complete checklist prior to the event.

3.4.9. Area 9--Forms/Reports/Logs:

3.4.9.1. **Q.** All required forms and/or flight plans were complete, accurate, readable, accomplished on time and IAW applicable directives. Related an accurate debrief of significant events to applicable agencies (Intel, Weather, Maintenance, etc.).

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

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

3.4.10. Area 10--Personal/Professional Equipment:

3.4.10.1. **Q.** Had all required personal and professional equipment. Displayed satisfactory knowledge of the care and use of such equipment and the contents of required publications. Required equipment inspections were current.

3.4.10.2. **Q-** Did not have all required personal/professional equipment or had limited knowledge of the use or the content of required publications.

3.4.10.3. **U.** Did not have required personal/professional equipment essential for the mission. Unsatisfactory knowledge of the care and use of equipment or the content of required publications. Required equipment inspections were overdue or equipment was unserviceable.

3.4.11. Area 11--Emergency Procedures:

3.4.11.1. **Q.** Operated within prescribed limits and correctly diagnosed problems. Performed and/or explained proper corrective action for each type of malfunction. Effectively used available aids.

3.4.11.2. **Q-** Systems knowledge was marginal. Slow to analyze problems or apply proper corrective actions. Did not effectively use checklist and/or available aids.

3.4.11.3. **U.** Systems knowledge was unsatisfactory. Unable to analyze problem or take corrective action. Did not use checklist and/or available aids.

3.4.12. Area 12--Briefings:

3.4.12.1. **Q.** Contributed to the briefing content to ensure it included all applicable information. Briefings effectively organized and presented in a logical sequence. Covered all pertinent items. Effectively used available briefing aids.

3.4.12.2. **Q-** Allowed omission of items pertinent but not critical to the mission. Briefings lacked continuity or contained unnecessary repetition. Some difficulty communicating clearly. Did not make effective use of available briefing aids. Dwelled on non-essential items.

3.4.12.3. **U.** Failed to conduct/attend required briefings. Failed to use briefing aids. Omitted essential items or did not correct erroneous information that could affect mission accomplishment.

Demonstrated lack of knowledge of subject. Briefing poorly organized and not presented in a logical sequence, resulting in confusion. Presented erroneous information that would affect safe/effective mission accomplishment.

3.4.13. Area 13--Anti-Hijacking/Aircraft Security:

3.4.13.1. **Q.** Explained proper anti-hijacking/aircraft security procedures.

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

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

3.4.14. Area 14 through 15--RESERVED. Reserved for future use.

3.5. Instructor Grading Criteria:

3.5.1. Area 16--Mission Preparation:

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

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

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

3.5.2. Area 17--Instructional Ability:

3.5.2.1. **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.

3.5.2.2. **Q-.** Accomplished the above tasks with minor discrepancies that did not affect safety or adversely affect student progress.

3.5.2.3. **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.

3.5.3. Area 18--Knowledge of Publications/Procedures:

3.5.3.1. **Q.** Possessed a high level of knowledge of all applicable aircraft systems, techniques, and missions to be performed. Possessed a high level of knowledge of all applicable publications and procedures, and understood how to apply both to enhance mission accomplishment.

3.5.3.2. **Q-.** Minor errors in knowledge of above areas did not affect safety or adversely affect student progress.

3.5.3.3. **U.** Knowledge of publications or procedures was inadequate. Could not apply knowledge obtained from publications.

3.5.4. Area 19--Briefings/Critique:

3.5.4.1. **Q.** Briefings were well organized, accurate, and thorough. Reviewed student's present level of training and defined mission events to be performed. Showed an excellent ability during the critique to reconstruct the flight, offer mission analysis, and provide guidance where appropriate. Training grade reflected the actual performance of the student relative to the standard. Pre-briefed the student's next mission, if required.

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

3.5.4.3. **U.** Briefings were marginal or non-existent. Did not review student 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.

3.5.5. Area 20--Demonstration of Procedures:

3.5.5.1. **Q.** Effectively demonstrated procedures and techniques. Had thorough knowledge of applicable aircraft systems, procedures, publications, and instructions.

3.5.5.2. **Q-.** Minor discrepancies in the above criteria did not affect safety or adversely affect student progress.

3.5.5.3. **U.** Did not demonstrate correct procedure or techniques. Depth of knowledge about applicable aircraft systems, procedures, and/or proper source material was insufficient.

3.5.6. Area 21 through 23--RESERVED. Reserved for future use.

Chapter 4

PILOT/COPILOT EVALUATIONS

4.1. General. The criteria contained here and in [Chapter 3](#) apply to all pilot/copilot flight evaluations.

4.2. Objective. The examinee must satisfactorily demonstrate the ability to perform all pilot/copilot duties safely and effectively, including the operation of appropriate aircraft systems, IAW applicable technical orders, directives and published procedures.

4.3. Requirements:

4.3.1. Instrument/Qualification. See [Table 2.3](#) for required evaluation areas. Normally, conduct instrument evaluations concurrently with qualification evaluations. As a minimum, instrument evaluations will include a Precision Approach Radar (PAR) or Instrument Landing System (ILS), and one non-precision approach.

4.3.1.1. Initial/Re-qualification Evaluations. All initial/re-qualification weapon system evaluations and initial evaluations for upgrade to aircraft commander will include a qualification evaluation.

4.3.2. Mission. See [Table 2.4](#) for required evaluation areas.

4.3.2.1. Tactical Airland. Evaluate a tactical approach, assault takeoff, and assault landing. Conduct evaluations on an actual 3,500 foot runway if available. If an actual 3,500 foot runway is not available, a larger runway with 3,500 foot markings and clearly identifiable touch down zone may be used. One go-around is permitted, provided the aircraft does not touch down short of the zone. As a minimum, thoroughly debrief copilots on assault procedures. This event is normally accomplished as part of the mission evaluation. Units may accomplish this as part of the Instrument/Qualification evaluation.

4.3.2.2. Mission evaluations should reflect a sampling of different events during an actual CSAR. As a minimum, a low-level route to either a Computed Air Release Point (CARP) or an air refueling, and tactical airland procedures must be flown to complete the evaluation. The airland procedure is not required if it was previously evaluated during the qualification evaluation. An NVG profile is desired, but units may substitute a day profile if an NVG profile is not available. Each evaluation will include as a minimum a CARP or an air refueling. If air refueling is not evaluated, it must be accomplished on the next evaluation.

4.4. Instrument/Qualification Criteria:

4.4.1. Areas 1 through 14. Use criteria in [Chapter 3](#) of this volume.

4.4.2. Area 24--Pre-Takeoff:

4.4.2.1. Q. Established and adhered to station, start engine, taxi, and take-off times to assure thorough preflight, check of personal equipment, crew/passenger briefings, etc. Accurately determined readiness of aircraft for flight. Performed all checks prior to takeoff. Taxi was as briefed (if applicable).

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

4.4.2.3. **U.** Omitted checklist items. Failed to accurately determine readiness of aircraft for flight. Crew errors directly contributed to a late takeoff that degraded the mission or made it ineffective.

4.4.3. **Area 25--Takeoff:**

4.4.3.1. **Q.** Maintained smooth, positive aircraft control throughout takeoff. Performed takeoff as published/directed.

4.4.3.1.1. **Airspeed.** +10/-5 knots (not less than Vmca)

4.4.3.1.2. **Heading.** +/-5 degrees

4.4.3.2. **Q-** Minor deviations from published procedures without affecting safety of flight. Control was rough or erratic. Was hesitant in application of procedures or corrections.

4.4.3.2.1. **Airspeed.** +15/-10 knots(not less than Vmca)

4.4.3.2.2. **Heading.** +/-10 degrees

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

4.4.4. **Area 26--Departure:**

4.4.4.1. **Q.** Complied with all restrictions or controlling agency instructions. Made all required reports. Applied course/heading corrections promptly. Demonstrated smooth, positive aircraft control.

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

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

4.4.5. **Area 27--En Route Navigation:**

4.4.5.1. **Q.** Satisfactory capability to navigate using all available means. Used appropriate navigation procedures. Ensured nav aids were properly tuned, identified, and monitored. Complied with clearance instructions. Aware of position at all times. Remained within the confines of assigned airspace.

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

4.4.5.3. **U.** Major errors in procedures/use of navigation equipment. Did not ensure nav aids were tuned, identified and monitored. Could not establish position. Failed to recognize checkpoints or adjust for deviations in time and course. Did not remain within the confines of assigned airspace.

4.4.6. Area 28--Comm/IFF/SIF:

4.4.6.1. **Q.** Complete knowledge of and compliance with correct Comm/IFF/SIF procedures. Transmissions were concise with proper terminology. Complied with and acknowledged all required instructions. Thoroughly familiar all with communications security requirements, HAVE QUICK and secure voice equipment (if applicable). Correctly authenticated.

4.4.6.2. **Q-.** Occasional deviations from procedures which required retransmissions 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 communication security requirements, HAVE QUICK and secure voice equipment (if applicable). Required numerous attempts to complete authentication.

4.4.6.3. **U.** Incorrect procedures or poor performance caused confusion and jeopardized mission accomplishment. Omitted numerous required radio calls. Displayed inadequate knowledge of communications security requirements, HAVE QUICK and secure voice equipment (if applicable). Was unable to properly authenticate.

4.4.7. Area 29--Descent/Arrival:

4.4.7.1. **Q.** Performed descent as directed. Complied with all restrictions. Accomplished required checks.

4.4.7.2. **Q-.** Performed descent as directed with minor deviations that did not compromise mission safety. Slow to accomplish required checks. Slow to make corrections.

4.4.7.3. **U.** Performed descent with major deviations. Did not accomplish required checks. Erratic corrections were observed.

4.4.8. Area 30--Holding/Procedure Turn:

4.4.8.1. **Q.** Performed entry and holding IAW with published procedures and directives.

4.4.8.1.1. **VOR.** 15 seconds

4.4.8.1.2. **TACAN.** 2 NM

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

4.4.8.2.1. **VOR.** 20 seconds

4.4.8.2.2. **TACAN.** 3 NMs

4.4.8.3. **U.** Holding was not IAW with technical orders, directives or published procedures. Exceeded Q- criteria for holding pattern limits.

4.4.9. Area 31--Non-Precision Approach:

4.4.9.1. **Q.** Approach was IAW published procedures. Used appropriate descent rate to arrive at Minimum Decision Altitude (MDA) at or before Visual Descent Point (VDP). Position would have permitted a safe landing.

4.4.9.1.1. **Airspeed.** +10/-5 knots

4.4.9.1.2. **Heading.** +/- 5 degrees (ASR)

4.4.9.1.3. **Course.** +/- 5 degrees at MAP

4.4.9.1.4. **Localizer.** Less than one dot deflection

4.4.9.1.5. **MDA.** +100/-0 feet

4.4.9.2. **Q-.** Performed approach with minor deviations. Arrived at MDA at or before the MAP, but past the VDP. Position would have permitted a safe landing.

4.4.9.2.1. **Airspeed.** +15/-5 knots

4.4.9.2.2. **Heading.** +/- 10 degrees (ASR)

4.4.9.2.3. **Course.** +/- 10 degrees at MAP

4.4.9.2.4. **Localizer.** Within two dots deflection

4.4.9.2.5. **MDA.** +150/-50 feet

4.4.9.3. **U.** Approach not IAW flight manual, directives or published procedures. Maintained steady-state flight below the MDA, even though the -50 foot limit was not exceeded. Could not land safely from approach. Exceeded Q- criteria.

4.4.10. **Area 32--Circling/Side-Step Approach:**

4.4.10.1. **Q.** Properly identified aircraft category for the approach and remained within the lateral limits for that category. Complied with controller's instructions. Attained runway alignment without excessive bank angles. Did not descend from the MDA until in a position to place the aircraft on a normal glide path or execute a normal landing.

4.4.10.1.1. **Airspeed.** +10/-5 knots

4.4.10.1.2. **Altitude.** +100/-0 feet

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

4.4.10.2.1. **Airspeed.** +15/-5 knots

4.4.10.2.2. **Altitude.** +150/-50 feet

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

4.4.11. **Area 33--Precision Approach:**

4.4.11.1. **NOTE:** A PAR or ILS approach must be accomplished in the aircraft to complete the evaluation.

4.4.11.2. **Q.** Approach was IAW published procedures. Smooth and timely response to azimuth and glide slope or controller's instructions. Complied with decision height. Position would have permitted a safe landing. Maintained glide path with only minor deviations.

4.4.11.2.1. **Airspeed.** +10/-5 knots

4.4.11.2.2. **Heading.** Within 5 degrees of controller instructions.

4.4.11.2.3. **Glide Slope/Azimuth.** Within one dot.

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

4.4.11.3.1. **Airspeed.** +15/-5 knots

4.4.11.3.2. **Heading.** Within 10 degrees of controller's instructions.

4.4.11.3.3. **Azimuth.** Within two dots.

4.4.11.4. **U.** Approach not IAW with flight manual, directives or published procedures. Corrections were erratic. 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- limits.

4.4.12. **Area 34--VFR Approach/Pattern:**

4.4.12.1. **Q.** Performed traffic pattern and turn to final/final approach IAW published procedures. Aircraft control was smooth and positive. Did not over/under-shoot final approach. Constantly cleared area of intended flight. Complied with uncontrolled airfield procedures (if applicable).

4.4.12.1.1. **Airspeed.** +10/-5 knots

4.4.12.1.2. **Pattern Altitude.** +/- 100 feet

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

4.4.12.2.1. **Airspeed.** +15/-5 knots

4.4.12.2.2. **Pattern Altitude.** +/- 200 feet

4.4.12.3. **U.** Did not perform traffic pattern and turn to final/final approach IAW technical orders, directives or published procedures. Displayed erratic aircraft control. Over/under-shot final approach by a wide margin requiring a go-around or potentially unsafe maneuvering on final. Did not clear area of intended flight. Did not comply with uncontrolled airfield procedures. Exceeded Q- criteria.

4.4.13. **Area 35--Engine Out Approach:**

4.4.13.1. **NOTE:** Use approach criteria for the type of approach being flown and the following:

4.4.13.2. **Q.** Proper control inputs were used to correct asymmetric condition. Aircraft was properly trimmed. Proper consideration was given to maneuvering with regard to the "dead" engine.

4.4.13.3. **Q-** Minor deviations in aircraft control allowed the aircraft to occasionally fly in uncoordinated flight.

4.4.13.4. **U.** Aircraft was not properly trimmed. Aircraft control was erratic and consistently resulted in uncoordinated flight. Maneuvering with regard to the "dead" engine was potentially unsafe.

4.4.14. **Areas 36 through 39.** Use the following criteria:

4.4.14.1. **NOTE:** Specific items to evaluate include threshold altitude/airspeed, runway alignment, flare, touchdown, landing in a crab, and landing roll.

4.4.14.2. **Q.** Performed landings as published/directed and met the following criteria:

4.4.14.2.1. **Airspeed.** +/-5 knots

4.4.14.2.2. **Designated Landing Point.** +1000/-500 feet

4.4.14.2.3. **Centerline.** Not more than 15 feet left or right of centerline

4.4.14.3. **Q-.** Performed landings with minor deviations to procedures as published/directed. Exceeded Q criteria but not the following:

4.4.14.3.1. **Airspeed.** +10/-5 knots

4.4.14.3.2. **Designated Landing Point.** +2000/-500 feet

4.4.14.3.3. **Centerline.** Not more than 25 feet left or right

4.4.14.4. **U.** Landing not performed as published/directed. Exceeded Q- criteria.

4.4.15. **Area 36--100/50 Percent Landing.**

4.4.16. **Area 37--No Flap Landing.**

4.4.17. **Area 38--Touch-and-Go Landing.**

4.4.18. **Area 39--Engine-Out Landing.**

4.4.19. **Area 40--Missed Approach/Go-Around:**

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

4.4.19.1.1. **Airspeed.** +10/-5 knots of briefed

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

4.4.19.2.1. **Airspeed.** +15/-5 knots of briefed

4.4.19.3. **U.** Did not execute missed approach IAW technical orders, directives or published procedures. Did not initiate go-around when appropriate or directed. Did not comply with controller's instructions. Deviations or misapplication of procedures could have led to an unsafe condition. Exceeded Q- criteria.

4.4.20. **Area 41--Engine-out Go-Around:**

4.4.20.1. **NOTE:** Use area 39 criteria and the following:

4.4.20.2. **Q.** Applied smooth, coordinated control inputs. Rudder and aileron inputs were in correct direction.

4.4.20.3. **Q-.** Rudder and aileron inputs were in correct direction but some over/under control.

4.4.20.4. **U.** Rudder and/or aileron inputs were incorrect.

4.4.21. Area 42--After Landing/Engine Shutdown:

4.4.21.1. **Q.** Appropriate after-landing/engine shutdown checks and aircraft taxi procedures accomplished IAW published procedures.

4.4.21.2. **Q-.** Minor deviations or omissions were made to published procedures.

4.4.21.3. **U.** Appropriate after-landing/engine shutdown checks or aircraft taxi procedures were not IAW technical orders, directives or published procedures. Major deviations or omissions occurred could have jeopardized safety.

4.4.22. Area 43--Bold Face. Critical:

4.4.22.1. **Q.** Correct, immediate responses. Maintained aircraft control. Coordinated proper crew actions.

4.4.22.2. **U.** Incorrect sequence, unsatisfactory response, or unsatisfactory performance of corrective action.

4.4.23. Area 44--Reverse Taxi:

4.4.23.1. **Q.** Complied with all directives concerning reverse taxi. Safety was not compromised.

4.4.23.2. **Q-.** Complied with most directives concerning reverse taxi. Deviations did not compromise safety.

4.4.23.3. **U.** Not able to correctly reverse taxi and safety was compromised.

4.4.24. Areas 45 through 46--RESERVED. Reserved for future use.**4.5. Mission Grading Criteria:**

4.5.1. **Areas 1 through 15.** Use criteria in **Chapter 3** of this volume.

4.5.2. Area 47--Pre-Takeoff:

4.5.2.1. **Q.** Established and adhered to station, start engine, taxi, and take-off times to assure thorough preflight, check of personal equipment, crew/passenger briefings, etc. Accurately determined readiness of aircraft for flight. Performed all checks prior to takeoff. Taxi was as briefed (if applicable).

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

4.5.2.3. **U.** Omitted checklist items. Failed to accurately determine readiness of aircraft for flight. Crew errors directly contributed to a late takeoff that degraded the mission or made it non-effective. Taxi not as briefed due to pilot error that contributed to late takeoff or confusion in the formation.

4.5.3. **Area 48--Comm/IFF/SIF.** Use Area 26 criteria.

4.5.4. **Area 49--En Route Navigation.** Use Area 27 criteria.

4.5.5. **Area 50--Defensive Systems/Tactics:**

4.5.5.1. **Q.** Demonstrated satisfactory knowledge of defensive systems/tactics. Applied appropriate tactics to avoid the threat and minimize exposure. Made timely and appropriate inputs to crew during mission.

4.5.5.2. **Q-.** Minor errors in threat analysis or tactics selection. Was unfamiliar with the appropriate tactic for a given scenario. Did not make timely inputs to crew during mission.

4.5.5.3. **U.** Knowledge of defensive systems was unsatisfactory. Major errors in threat analysis or tactics selection would have resulted in an unsuccessful mission.

4.5.6. Area 51--Threat Avoidance:

4.5.6.1. **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. Was aware of appropriate tactics to avoid threats and exposure.

4.5.6.2. **Q-.** Made minor errors in plotting and avoiding the lethal range of a given threat system. Minor errors in threat analysis or tactics selection.

4.5.6.3. **U.** Was 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. Was not aware of appropriate tactics for specific threats or terrain.

4.5.7. Area 52--Slowdown. Use Area 27 criteria (as appropriate).

4.5.8. Area 53--Airdrop Procedures:

4.5.8.1. **Q.** Correctly identified the DZ and made appropriate corrections to fine-tune track. Track was IAW mission plan or as updated by crew. Aircraft configuration was correct.

4.5.8.1.1. **Airspeed.** +/-5 knots

4.5.8.1.2. **Altitude.** +50/-0 feet

4.5.8.2. **Q-.** Identified the DZ late despite clear marking and sufficient landmarks. Alignment was satisfactory but tended to angle. Minor errors in aircraft configuration but would not impede mission accomplishment.

4.5.8.2.1. **Airspeed.** +10/-5 knots

4.5.8.2.2. **Altitude.** +100/-50 feet

4.5.8.3. **U.** Was unable to identify DZ due to poor technique or pilot error. Did not fly proper alignment, or unaware of alignment error. Mission not accomplished due to aircraft configuration, poor DZ acquisition, alignment or deviation from procedures, caused by pilot error or omission. Did not recognize a no-drop situation. Exceeded Q- criteria.

4.5.9. Area 54--Escape. Use Area 27 criteria (as appropriate).

4.5.9.1. **Q.** Aircraft configuration was correct. In addition, the following parameters were not exceeded.

4.5.9.1.1. **Airspeed.** +/-5 knots

4.5.9.1.2. **Altitude.** +50/-0 feet

4.5.9.2. **Q-** Minor errors in aircraft configuration but would not impede mission accomplishment or safety. In addition, the following parameters were not exceeded.

4.5.9.2.1. **Airspeed.** +10/-5 knots

4.5.9.2.2. **Altitude.** +100/-50 feet

4.5.9.3. **U.** Aircraft configuration was not correct or Q- tolerances were exceeded.

4.5.10. **Area 55--Tactical Recovery:**

4.5.10.1. **Q.** Followed procedures as briefed. Displayed smooth, positive control throughout the recovery. Aircraft was in position to intercept glidepath to assault landing. Constantly cleared area of intended flight.

4.5.10.2. **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 assault landing.

4.5.10.3. **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.

4.5.11. **Area 56--Assault Procedures:**

4.5.11.1. **Q.** Displayed satisfactory knowledge of assault procedures. Could describe and apply terms such as acceleration check speed, Minimum Field Length for Maximum Effort Take-Off (MFLMETO), three-engine Vmca, etc. Thoroughly analyzed departure/landing runway and surrounding terrain. Reviewed all applicable TOLD and thoroughly briefed crew on their duties.

4.5.11.2. **Q-** Minor deviations in knowledge or published procedures. Minor errors in describing or applying above terms. Minor errors or omissions in TOLD or crew briefing.

4.5.11.3. **U.** Procedures not IAW flight manual, directives or published procedures. Unable to analyze assault zone constraints or verbalize concerns posed by terrain or other factors. Could not describe or apply above terms. Major errors in TOLD data review or crew briefing. Displayed unsatisfactory knowledge of assault procedures.

4.5.12. **Area 57--Assault Takeoff:**

4.5.12.1. **Q.** Maintained smooth positive control throughout departure roll and takeoff. Climbed on speed and decreased angle of attack once clear of obstacle.

4.5.12.2. **Q-** Control inputs were abrupt. Minor deviations from published/briefed procedures did not jeopardize safety.

4.5.12.3. **U.** Takeoff was not IAW with flight manual, directives or published procedures. Did not use Vmca when conditions permitted. Raised flaps too quickly with relation to airspeed. Performance of maneuver jeopardized safety.

4.5.13. **Area 58--Assault Landing:**

4.5.13.1. **Q.** Maintained smooth approach path. Used proper aim points with positive corrections, as necessary. Touched down on centerline within the zone (defined as the first 500 feet of usable runway) without excessive bouncing or crab. Maintained runway centerline during roll-out.

4.5.13.1.1. **Airspeed.** +/- 5 knots

4.5.13.2. **Q-** Minor deviations to published procedures. Aim point wandered or corrections were not smooth or timely. Landed in zone but had excessive bouncing or crab. Touchdown was no more than 10 feet from centerline.

4.5.13.2.1. **Airspeed.** +10/-5 knots

4.5.13.3. **U.** Touchdown short of the landing zone. Touchdown beyond the landing zone and did not execute a go-around. Exceeded Q- criteria.

4.5.14. Area 59--NVG Usage/Limitations:

4.5.14.1. **Q.** Correctly described the use/limitations of night vision goggles (NVGs). Properly pre-flighted, handled, and used NVGs during the flight.

4.5.14.2. **Q-** Made minor omissions or deviations in describing the use/limitations of NVGs. Did not properly pre-flight, handle, or use NVGs during the flight, but caused no damage to equipment. Mission success not negatively affected.

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

4.5.15. Area 60--Air Refueling/Tanker:

4.5.15.1. **Q.** Performed aerial rendezvous, join-up and disconnect procedures as published/directed. Maintained positive aircraft control throughout the refueling event. Responded quickly and accurately to situations requiring an emergency breakaway. Correctly performed emergency breakaway or verbally evaluated event to the satisfaction of the evaluator.

4.5.15.1.1. **Airspeed.** +/-5 knots

4.5.15.1.2. **Heading/Course.** +/-10 degrees

4.5.15.1.3. **Altitude.** +/-100 feet

4.5.15.1.4. **Join-up Altitude.** +100/-50 feet

4.5.15.2. **Q-** Performed procedure with minor deviations. Slow to make aircraft attitude corrections. Aircraft control was not consistently smooth and positive. Emergency breakaway performed with minor discrepancies that did not affect safety or verbally evaluated event with minor discrepancies noted.

4.5.15.2.1. **Airspeed.** +10/-5 knots

4.5.15.2.2. **Heading/Course.** +/-20 degrees

4.5.15.2.3. **Altitude.** +/-150 feet

4.5.15.2.4. **Join-up Altitude.** +200/-100 feet

4.5.15.3. **U.** Refueling not performed IAW flight manual, directives or published procedures. Made erratic corrections throughout the aerial refueling. Did not respond accurately to situation requiring emergency breakaway. Performed emergency breakaway with major discrepancies or verbally evaluated event with major errors noted. Exceeded Q- criteria.

4.5.16. Area 61--MA-1/2 Kit Delivery:

- 4.5.16.1. **Q.** Correctly delivered MA-1/2 survival kit, bracketing the survivor within 100 feet. Kit was delivered on the correct side (upwind or downwind). Displayed thorough knowledge of delivery method.
- 4.5.16.2. **Q-.** Airdrop within 300 feet of the survivor, properly bracketed on correct side (upwind or downwind). Difficulty expressing intentions to crew, but able to deliver kit safely.
- 4.5.16.3. **U.** Delivery not IAW flight manual, directives or published procedures. Airdrop greater than 300 feet from the survivor. Was unable to coordinate with crew for airdrop intentions. Kit delivered to incorrect side (upwind or downwind). Aircraft was flown in an erratic manner. Exceeded Q- criteria.
- 4.5.17. **Area 62--Parabundle Delivery.** Use Area 53 criteria.
- 4.5.18. **Area 63--Freefall Delivery.** Use Area 53 criteria.
- 4.5.19. **Area 64--Para-Rescue (PJ) Directed Airdrop:**
- 4.5.19.1. **NOTE:** Use Area 53 criteria and the following:
- 4.5.19.2. **Q.** Correctly followed briefed airdrop procedures. Flew stable platform, effectively coordinated airdrop with jumpmaster.
- 4.5.19.3. **Q-.** Minor deviations to published/briefed procedures, but able to complete airdrop safely. Erratic aircraft control caused problems with jumpmaster's directions.
- 4.5.19.4. **U.** Airdrop not IAW flight manual, directives or published procedures. Unable to coordinate with jumpmaster to successfully accomplish the airdrop. Exceeded Q- criteria.
- 4.5.20. **Area 65 through 67--RESERVED.** Reserved for future use.

Chapter 5

NAVIGATOR EVALUATIONS

5.1. General. The criteria contained here and in [Chapter 3](#) apply to all navigator flight evaluations.

5.2. Objective. The examinee must satisfactorily demonstrate the ability to perform all navigator duties safely and effectively, including the operation of appropriate aircraft systems, IAW applicable flight manuals, and directives.

5.3. Requirements:

5.3.1. Qualification. See [Table 2.5](#) for required evaluation areas. The mission must include a Category I route, or a Category II route using Category I procedures, of sufficient length to demonstrate proficiency in navigation procedures.

5.3.1.1. Simulator Evaluations. Navigators with 3 or more years experience in HC-130 aircraft may accomplish recurring qualification evaluations in the simulator (OFT, WST, or SNS); however, use simulators as a last resort to perform evaluations. Do not conduct consecutive qualification evaluations in the simulator. (**EXCEPTION:** Formal school NRQ [basic re-qualification] students will normally accomplish evaluations in the SNS).

5.3.1.2. Airborne Radar Approach (ARA). The ARA is a basic navigation proficiency item normally accomplished in conjunction with the mission evaluation. State that an ARA was evaluated in the comments section of the AF Form 8. ARAs must be evaluated in the aircraft. (**EXCEPTION:** ARAs may be accomplished in the SNS as part of the NRQ evaluation).

5.3.2. Mission. See [Table 2.6](#) for required areas. Mission evaluations should reflect a sampling of different events during an actual CSAR. As a minimum, a low-level route to a CARP airdrop or air refueling must be flown to complete the evaluation. An NVG profile is desired, but units may substitute a day profile if an NVG profile is not available. Evaluate air refueling rendezvous using any aircraft flying approximate helicopter airspeeds as a target. If practical, a search pattern (to include a breakout and reentry of the pattern) should also be scheduled as part of the mission profile.

5.4. Qualification Grading Criteria:

5.4.1. Areas 1 through 13. Use criteria in [Chapter 3](#) of this volume.

5.4.2. Area 68--Flight Plan/Charts:

5.4.2.1. Q. Manually completed a flight plan in its entirety with time errors not exceeding 5 minutes of total time to destination, or demonstrated manual flight planning procedures if a computer flight plan was used. Selected current navigation charts of a proper scale and type of the mission profile. Charts constructed IAW current directives. Plotting errors did not exceed 5 NMs.

5.4.2.2. Q-. Minor errors or omissions that would not have adversely affected mission accomplishment. Time errors did not exceed 10 minutes. Plotting errors did not exceed 10 NMs.

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

5.4.3. Area 69--Fuel Planning:

5.4.3.1. **Q.** Knowledgeable with the type and use of data contained in the fuel planning regulation. "En route fuel" computation errors did not exceed 3%. Correctly computed other time and fuel analysis items. Correctly computed an Estimated Time of Parity (ETP), when required. Correctly constructed a range control chart (optional).

5.4.3.2. **Q-.** Displayed limited knowledge of the fuel planning regulation. "En route fuel" computation errors did not exceed 5%. Other fuel computations and/or ETP computed with minor mathematical errors or omissions that would not adversely affect mission accomplishment. If constructed, the range control chart had minor errors or omissions.

5.4.3.3. **U.** Displayed inadequate knowledge of the fuel planning regulation. Fuel computations and/or ETP were not completed or contained major errors or omissions. If constructed, range control chart had major errors and omissions. Exceeded Q- criteria.

5.4.4. Area 70--Departure:

5.4.4.1. **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.

5.4.4.2. **Q-.** Monitored aircraft position, but slow to provide headings, ETAs or other required information. Performance did not degrade mission accomplishment nor compromise flight safety.

5.4.4.3. **U.** Did not monitor departure headings, airspeeds or altitudes. Unaware of aircraft position and unable to provide updated information when required. Did not use a SID and/or an appropriate scale departure area chart. Allowed major deviations that degraded mission accomplishment or compromised safety.

5.4.5. Area 71--Radio Navigation:

5.4.5.1. **Q.** Accurately tuned, identified, read and interpreted readings of TACANs, VORs or NDBs. Consistently selected stations that afforded the best LOPs. Position accuracy within 4 NMs.

5.4.5.2. **Q-.** Better use of radio aids could have enhanced navigation. Displayed weakness in fixing or plotting procedures. Position accuracy did not exceed 8 NMs.

5.4.5.3. **U.** Unable to accurately tune and identify radio aids. Did not understand VOR/TACAN/NDB bearing procedures or was unable to obtain position by means of radio aids. Position error greater than 8 NMs.

5.4.6. Area 72--Radar Navigation:

5.4.6.1. **Q.** Demonstrated thorough knowledge and understanding of radar equipment. Used correct procedures for radar operation and weather avoidance procedures. Radar position error did not exceed 5 NMs.

5.4.6.2. **Q-.** Demonstrated adequate knowledge of equipment, but occasionally used improper operating procedures. Had difficulty identifying radar returns. Radar position error did not exceed 10 NMs.

5.4.6.3. **U.** Displayed unsatisfactory knowledge of radar equipment. Used improper operating procedures that were potentially harmful to system components. Failed to correctly interpret scope returns. Displayed unsatisfactory knowledge of weather avoidance procedures. Radar position error greater than 10 NMs.

5.4.7. Area 73--Navigation Systems:

5.4.7.1. **NOTE:** All references to navigation systems refer to actual systems onboard unit aircraft (i.e., INS, SCNS, or Global Positioning System (GPS)).

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

5.4.7.3. **Q-.** Had only a basic knowledge of onboard navigation systems. Made minor errors in operation/interpretation of navigation system data. More selective updating could have increased system effectiveness.

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

5.4.8. Area 74--Deviation Check:

5.4.8.1. **Q.** Correctly computed compass deviation within 2 degrees of actual.

5.4.8.2. **Q-.** Minor errors in readings or computations. Computations were within 3 degrees of actual.

5.4.8.3. **U.** Did not accomplish deviation check or exceeded Q- criteria.

5.4.9. Area 75--TAS Check:

5.4.9.1. **Q.** TAS check accomplished on time and error did not exceed 5 knots.

5.4.9.2. **Q-.** Minor errors in readings or computations. Error did not exceed 10 knots. Completed TAS check late.

5.4.9.3. **U.** Did not accomplish TAS check or error exceeded 10 knots.

5.4.10. Area 76--Dead Reckoning (DR)/Rating of Navigational Computers:

5.4.10.1. **Q.** Made effective use of DR/Rating of navigational computers during aircraft positioning. Computed and plotted positions within 10 NMs, selecting the most reliable information.

5.4.10.2. **Q-.** Occasionally did not identify the navigational computer providing the most reliable information or used improper DR procedures resulting in erroneous ETAs or headings. Computed or plotted position error did not exceed 15 NMs.

5.4.10.3. **U.** Was unable to use DR/Rate navigational computers effectively. Computed or plotted position error exceeded 15 NMs.

5.4.11. **Areas 77 and 78--RESERVED.** Reserved for future use.

5.4.12. Area 79--Course and ETA Tolerance:

5.4.12.1. **Q.** Remained within 10 NMs of course centerline. ETAs/RETAs were within 2 minutes of actual times of arrival (ATAs). Accurately determined course deviation for weather.

5.4.12.2. **Q-** Remained within 15 NMs of course centerline. ETAs/RETAs were within 3 minutes of ATAs.

5.4.12.3. **U.** Exceeded Q- criteria and/or flight examiner had to alter aircraft heading to remain within course tolerance, clear special use airspace, or correctly deviate around weather.

5.4.13. Area 80--Fuel Management/Range Control:

5.4.13.1. **Q.** Maintained fuel management/range control IAW directives. Kept pilot advised of fuel status.

5.4.13.2. **Q-** Adequate fuel management/range control with minor computation errors noted. Did not adequately update the pilot on fuel status.

5.4.13.3. **U.** Failed to demonstrate an understanding of fuel management/range control procedures. Fuel computations not accomplished or contained significant errors. Failed to inform pilot of fuel status.

5.4.14. Area 81--Descent/Approach/Landing:

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

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

5.4.14.3. **U.** Failed to monitor aircraft position. Did not ensure terrain clearance during the approach. No area chart available.

5.4.15. Area 82--Airborne Radar Approach (ARA). See Area 104.

5.4.16. Area 83--Radio Transmission - Usage and Discipline:

5.4.16.1. **Q.** Radio communications (both inter- and intra-cockpit) were concise, accurate, and effectively used to direct actions by the crew to update appropriate agencies of the tactical situation.

5.4.16.2. **Q-** Minor terminology errors or omissions occurred, but did not significantly detract from situational awareness, threat warning, or mission accomplishment. Extraneous comments over primary and secondary radios presented minor distractions.

5.4.16.3. **U.** Radio communications over primary/secondary radios were inadequate or excessive. Inaccurate or confusing terminology significantly detracted from situational awareness, threat warning, or mission accomplishment.

5.4.17. Area 84--Emergency Equipment:

5.4.17.1. **Q.** Displayed thorough knowledge of location and use of emergency equipment.

5.4.17.2. **Q-** Limited knowledge of location and use of emergency equipment.

5.4.17.3. **U.** Displayed unsatisfactory knowledge of emergency equipment.

5.4.18. Area 85 through 89--RESERVED. Reserved for future use.

5.5. Mission Grading Criteria:

5.5.1. **Areas 1 through 13.** Use the criteria in **Chapter 3** of this volume.

5.5.2. Area 90--Flight Plan/Airdrop Data/Charts:

5.5.2.1. **Q.** Completed flight plans in entirety with total time error not exceeding 2 minutes. CARP data completed in entirety with negligible errors. Charts completed IAW current directives. Plotting errors did not exceed 1 NM.

5.5.2.2. **Q-.** Minor errors or omissions that would not have adversely affected mission accomplishment. Total time error did not exceed 4 minutes. Plotting errors did not exceed 2 NMs.

5.5.2.3. **U.** Flight plan and CARP data were not completed or contained major errors/omissions. Selected an improper or obsolete chart. Plotting errors in excess of 2 NMs.

5.5.3. Area 91--Advisories:

5.5.3.1. **Q.** In-flight briefings/advisories provided clear and concise information in a timely manner.

5.5.3.2. **Q-.** In-flight briefings/advisories contained minor errors or omitted non-critical information.

5.5.3.3. **U.** Did not provide required in-flight briefings/advisories.

5.5.4. Area 92--Navigation Procedures:

5.5.4.1. **Q.** Certain of exact aircraft position. Remained within 3 NMs of course centerline (**EXCEPTIONS:** Threat avoidance, weather deviation, ATC assigned heading, time control, etc.). Thorough knowledge of en route time status in relation to objective area. Complied with all altitude restrictions. Airspeed control contributed to reliable DR. Adhered to all airspace restrictions.

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

5.5.4.3. **U.** Exceeded 5 NMs during en route navigation without the above exceptions. Was unable to maintain position awareness throughout most of the route. Unable to accurately assess required timing or unaware of mission time status, jeopardizing formation integrity or mission accomplishment. Violated airspace restrictions. Poor airspeed control resulted in numerous or extreme airspeed adjustment. Descended below minimum altitude restrictions.

5.5.5. Area 93--Defensive Systems/Tactics/Threat Analysis:

5.5.5.1. **Q.** Had thorough knowledge of necessary defensive systems/tactics applicable to the mission. Adequately analyzed, degraded, and avoided all threats ensuring effective mission accomplishment. Made timely inputs to the aircrew.

5.5.5.2. **Q-.** Limited knowledge of defensive systems/tactics applicable to the mission. Adequately analyzed, degraded and avoided all threats; however, selected some tactics not appropriate for the situation. Did not make timely inputs to the aircrew.

5.5.5.3. **U.** Had unsatisfactory knowledge of defensive systems/tactics applicable to the mission. Failed to ensure mission effectiveness by not adequately analyzing, degrading and avoiding threat(s). Aircraft exposed to known threats due to crew error.

5.5.6. Area 94--Threat Avoidance:

5.5.6.1. **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. Was aware of appropriate tactics to avoid threats and exposure.

5.5.6.2. **Q-.** Made minor errors in plotting and avoiding the lethal range of a given threat system. Minor errors in threat analysis or tactics selection.

5.5.6.3. **U.** Was 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. Was not aware of appropriate tactics for specific threats or terrain.

5.5.7. Area 95--In-flight Airdrop Computation:

5.5.7.1. **Q.** CARP properly reevaluated in-flight.

5.5.7.2. **Q-.** CARP not properly reevaluated, but airdrop was successful.

5.5.7.3. **U.** CARP not reevaluated in-flight leading to a no-drop, unsuccessful drop or negatively affecting the airdrop.

5.5.8. Area 96--Slowdown:

5.5.8.1. **Q.** Had thorough knowledge of slowdown procedures. Complied with all published/briefed procedures.

5.5.8.2. **Q-.** Limited knowledge of slowdown procedures. Minor deviations did not affect mission accomplishment or formation integrity.

5.5.8.3. **U.** Had unsatisfactory knowledge of slowdown procedures. Major deviations adversely affected mission accomplishment or formation integrity.

5.5.9. Area 97--DZ/LZ Acquisition:

5.5.9.1. **Q.** Timely identification of the DZ/LZ allowed for a smooth approach to the objective area.

5.5.9.2. **Q-.** Late identification of the DZ/LZ caused an abrupt change in procedures or course into the objective area, but did not affect mission accomplishment.

5.5.9.3. **U.** Did not identify the DZ/LZ or late identification negatively affected mission accomplishment.

5.5.10. Area 98--DZ Alignment:

5.5.10.1. **Q.** Directed the aircraft to an optimum DZ alignment from slowdown through escape. Clearly communicated desired aircraft position to the crew.

5.5.10.2. **Q-.** Slow in establishing or maintaining effective DZ alignment, but did not adversely impact mission accomplishment or formation integrity.

5.5.10.3. **U.** Failed to establish effective DZ alignment that contributed to an unsuccessful air-drop/no-drop condition or adversely affected the formation.

5.5.11. Area 99--Time Over Target (TOT) (Critical):

5.5.11.1. Airdrop Criteria:

5.5.11.1.1. **Q.** TOT +/-60 seconds.

5.5.11.1.2. **U.** Exceeded Q criteria.

5.5.12. Area 100--Airdrop Accuracy. Critical:

5.5.12.1. **Q.** Stayed within the following Circular Error (CE).

5.5.12.1.1. **Personnel, Standard Airdrop Training Bundle (SATB), and Door/Ramp Bundles:** 300 meters. For airdrops above 800' above ground level (AGL), add 15 meters for each 100' above 800' to a maximum total CE of 600 meters.

5.5.12.1.2. **Rigging Alternate Method Zodiac (RAMZ)/Container Delivery System (CDS):** 200 meters. For airdrops above 600' AGL, add 20 meters for each 100' above 600' to a maximum total CE of 400 meters.

5.5.12.1.3. For night visual airdrops, add 50 meters to allowable CE not to exceed the above maximums.

5.5.12.2. **U.** Exceeded Q criteria.

5.5.13. Area 101--Escape:

5.5.13.1. **Q.** Escape and recovery executed IAW published or briefed procedures.

5.5.13.2. **Q-.** Minor errors in escape and/or recovery procedures that did not affect mission accomplishment.

5.5.13.3. **U.** Major deviations from procedures that negatively affected mission accomplishment, formation integrity or flight safety.

5.5.14. Area 102--NVG Usage/Limitations:

5.5.14.1. **Q.** Correctly described the use/limitations of night vision goggles (NVGs). Properly pre-flighted, handled, and used NVGs during the flight.

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

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

5.5.15. Area 103--ARCP Time Control (Critical):

5.5.15.1. **Q.** Arrived at the Air Refueling Control Point (ARCP) on time to 120 seconds late.

5.5.15.2. **U.** Exceeded Q criteria.

5.5.16. Area 104--Airborne Radar Approach (ARA):

5.5.16.1. **Q.** Complied with all published procedures. Successfully directed the aircraft to ARA minimums so that a safe landing could be made. Used proper terminology; instructions were clear and concise during the entire approach.

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

5.5.16.3. **U.** Had unsatisfactory knowledge of ARA procedures. Unable to direct the aircraft to a point from which a safe landing could be made.

5.5.17. Area 105--Search Data Computations:

5.5.17.1. **Q.** Checked all factors pertaining to search mission, such as weather and sea conditions, objective size, search time, and aircraft endurance. Selected an appropriate search pattern and accurately computed information such as track spacing, search altitude, and search speed.

5.5.17.2. **Q-.** Only the minimum information necessary to conduct the search was checked.

5.5.17.3. **U.** Inadequate knowledge of mission data; failed to check factors applicable to flight. Computations contained major errors or omissions. Poor planning degraded mission accomplishment or compromised safety.

5.5.18. Area 106--Search Pattern:

5.5.18.1. **Q.** Thorough understanding of search patterns. Monitored aircraft position throughout the pattern and allowed only minor deviations from centerline. Able to break out of search pattern for a possible sighting and reenter at original location to resume pattern.

5.5.18.2. **Q-.** Adequate knowledge of search patterns. Allowed aircraft to deviate from course line on numerous occasions and was slow to correct back to course. Excessive time devoted attempting to reenter pattern.

5.5.18.3. **U.** Inadequate knowledge of search patterns. Unsure of aircraft position during search pattern. Major deviations from course compromised mission accomplishment. Unable to break-out and reenter pattern.

5.5.19. Area 107 through 109--RESERVED. Reserved for future use.

Chapter 6

FLIGHT ENGINEER EVALUATIONS

6.1. General. The criteria contained in this chapter and [Chapter 3](#) apply to all flight engineer flight evaluations.

6.2. Objective. The examinee must satisfactorily demonstrate the ability to perform all flight engineer duties safely and effectively, including the operation of appropriate aircraft systems, IAW applicable technical orders, instructions, and directives.

6.3. Requirements:

6.3.1. Mission/Qualification Evaluations. See [Table 2.7](#) for required evaluation areas. Accomplish recurring mission/qualification evaluations on any flight profile except Functional Check Flights. If the mission evaluation is conducted independently of the qualification evaluation, a mission EPE must be conducted and annotated in the ground phase section of the mission AF Form 8.

6.3.1.1. For units with an assault mission, evaluate computed maximum effort TOLD data and a maximum effort profile (take-off and landing) to an assault zone (if available).

6.3.1.2. Mission profile will consist of a low-level route to an air refueling (T.O. 1-1C-1-20, *Flight Crew Air Refueling Procedures*, checklist procedures, to include running the hose, is required and helicopter/fuel transfer is desired). An NVG profile is desired, but not required.

6.4. Mission/Qualification Grading Criteria:

6.4.1. **Areas 1 through 13.** Use criteria in [Chapter 3](#) of this volume.

6.4.2. Area 110--AFTO Form 781:

6.4.2.1. **Q.** Identified and reported discrepancies in a clear, concise, accurate, and timely manner IAW T.O. 00-20-5 *Aircraft, Drone, Aircrew Training Devices, Engines, Air Launched Missile Inspections, Flight Reports, and Supporting Maintenance Documents*; and other applicable directives.

6.4.2.2. **Q-.** Some information reported incorrectly or incompletely due to errors, omissions, or deviations. Limited knowledge of proper discrepancy reporting IAW T.O. 00-20-5.

6.4.2.3. **U.** Did not identify or report discrepancies; omitted or incorrectly reported significant information due to errors, omissions, or deviations.

6.4.3. Area 111--Ground Support Equipment:

6.4.3.1. **Q.** Accomplished or demonstrated a satisfactory knowledge of positioning, normal operation, and emergency shutdown of required ground support equipment with no errors, omissions, or deviations.

6.4.3.2. **Q-.** Accomplished or demonstrated a limited knowledge of positioning, normal operation, and emergency shutdown of required ground support equipment with minor errors, omissions, or deviations that did not jeopardize safety.

6.4.3.3. **U.** Failed to accomplish or demonstrate adequate knowledge of positioning, normal operation, and emergency shutdown of required ground support equipment that did or could have jeopardized safety.

6.4.4. Area 112--Refuel/Defuel:

6.4.4.1. **Q.** Demonstrated a satisfactory knowledge of or accomplished refuel/defuel operations with no errors, omissions, or deviations from established procedures. Maintained fuel balance limits and adhered to existing published safety precautions. Demonstrated a working knowledge of the aircraft the refueling/defueling system and a satisfactory knowledge of concurrent refueling procedures and appropriate safety precautions IAW T.O. 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*.

6.4.4.2. **Q-.** Demonstrated a limited knowledge of or accomplished refuel/defuel operations with minor errors, omissions, or deviations that did not jeopardize safety. Limited knowledge of the aircraft refueling/defueling system and components.

6.4.4.3. **U.** Demonstrated inadequate knowledge of or failed to accomplish refuel/defuel operations, made errors, omissions, or deviations that would have jeopardized safety. Demonstrated inadequate knowledge of concurrent refueling operations and appropriate safety precautions.

6.4.5. Area 113--TOLD Data:

6.4.5.1. **Q.** Correctly computed the TOLD data using applicable performance data and corrections for existing field conditions. Transcribed Mini TOLD data correctly. Was fully knowledgeable of takeoff and landing performance data.

6.4.5.1.1. TOLD Criteria:

6.4.5.1.1.1. **Required Airspeeds.** +/-2 knots.

6.4.5.1.1.2. **Required Distances.** +/- 200 feet.

6.4.5.1.1.3. **Predicted Take-Off Torque.** +/- 200 in/lbs.

6.4.5.2. **Q-.** Minor errors in the use of applicable performance charts, computing the performance data, or correcting for existing field conditions resulting in data exceeding Q criteria. Incorrectly transcribed Mini TOLD data. Had some knowledge of takeoff and landing performance data. Would not have compromised safety of flight.

6.4.5.2.1. TOLD Criteria:

6.4.5.2.1.1. **Required Airspeeds.** +/- 4 knots.

6.4.5.2.1.2. **Required Distances.** +/- 400 feet.

6.4.5.2.1.3. **Predicted Take Off Torque.** +/- 400 in/lbs.

6.4.5.3. **U.** Failed to compute TOLD data, omitted necessary corrections for existing field conditions, or errors in computing performance data resulted in airspeeds and/or distances exceeding Q-criteria. Limited knowledge of takeoff and landing performance data. Did or could have compromised safety of flight.

6.4.6. Areas 114 through 118. Use the following criteria:

6.4.6.1. **Q.** Accomplished required checklists without errors, omissions, or deviations. Backed up pilots on flight parameters (i.e., altitudes, airspeeds, and clearances). Satisfactorily monitored engine/system indicators. Fully knowledgeable of performance charts and procedures required to obtain and record in-flight performance data. Fuel system usage and configuration was IAW operating manual and applicable directives. Recognized and corrected minor omissions or deviations. Recognized, reported, and properly documented out of limit conditions or malfunctions.

6.4.6.2. **Q-.** Accomplished required checklists with minor errors, omissions, or deviations. Backed up pilots on flight parameters (i.e., altitudes, airspeeds, and clearances) with some deviations. Monitored engine/system indicators with some deviations. Limited knowledge of performance charts and procedures required to obtain and/or record in-flight performance data. Limited knowledge of fuel system usage and configuration caused deviations from operating manual and applicable directives. Slow to recognize, report, and/or document out of limit conditions or malfunctions.

6.4.6.3. **U.** Failed to accomplish required checklists or made numerous errors, omissions, deviations. Failed to back up pilots on flight parameters (i.e., altitudes, airspeeds, and clearances). Failed to monitor engine/system indicators. Inadequate knowledge of performance charts and/or procedures required to obtain data for two or three engines operating. Had inadequate knowledge of fuel system usage and configuration. Allowed limitations to be exceeded, which, without correction, would cause damage to equipment.

6.4.7. **Area 114--Engine Start.**

6.4.8. **Area 115--Taxi.**

6.4.9. **Area 116--Take-off.**

6.4.10. **Area 117--En route.**

6.4.11. **Area 118--Landing/Engine Shutdown.**

6.4.12. **Area 119--Postflight:**

6.4.12.1. **Q.** Accomplished required checklists without errors, omissions, or deviations. Insured aircraft properly configured for parking. [i.e. nose gear pin, ground wires (if applicable), intakes, door locks]

6.4.12.2. **Q-.** Accomplished required checklists with minor errors, omissions, or deviations. Minor errors insuring aircraft properly configured for parking.

6.4.12.3. **U.** Failed to accomplish required checklists. Did not insure aircraft was properly configured for parking.

6.4.13. **Area 120--Mission Procedures:**

6.4.13.1. **NOTE.** Mission Procedures is written to allow each unit to evaluate the individual unit mission specific events. Some units do not have any flight specific mission events for flight engineers however, flight engineers will be verbally evaluated on mission knowledge. Applicable mission requirements will be published in the local unit supplement to AFI 11-202V2.

6.4.13.2. **Q.** Was fully knowledgeable of unit mission procedures. Performed all associated mission checklists and low level operations (if applicable) IAW applicable directives. Demonstrated satisfactory knowledge of mission events. Demonstrated adequate situational awareness.

6.4.13.3. **Q-**. Limited knowledge of unit mission procedures. Minor deviations, errors or omissions on mission checklists that would not have adversely affected mission accomplishment. Demonstrated limited knowledge of mission events. Limited situational awareness.

6.4.13.4. **U**. Inadequate knowledge of unit mission procedures. Made significant errors, deviations, and/or omissions in mission checklists that would have adversely affected the safe or timely accomplishment of the mission. Had inadequate knowledge of mission events. Had inadequate situational awareness.

6.4.14. Area 121--Assault Takeoff/Landing:

6.4.14.1. **Q**. Was fully knowledgeable of assault takeoff and landing procedures IAW applicable directives. TOLD data computed within Q tolerances as stated in area 113.

6.4.14.2. **Q-**. Limited knowledge of assault takeoff and landing procedures. TOLD data computed within Q- tolerances as stated in area 113.

6.4.14.3. **U**. Had inadequate knowledge of assault takeoff and landing procedures. TOLD data exceeded Q- tolerances as stated in area 113.

6.4.15. Area 122--NVG Usage/Limitations:

6.4.15.1. **Q**. Correctly described the use/limitations of night vision goggles (NVGs). Properly pre-flighted, handled, and used NVGs during the flight.

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

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

6.4.16. Area 123--Air Refueling System/Procedures:

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

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

6.4.16.3. **U**. Inadequate knowledge of air refueling operations and procedures. Deviations/omissions could have affected successful accomplishment of the air refueling mission. Inadequate

knowledge of fuel system management or exceeded wing fuel balance limitations. Could not identify, locate, or relate systems functions and limitations. Could not determine status of system or its effect on related system. Failed to recognize malfunctions and/or apply corrective action(s).

6.4.17. Area 124--Loss of Drogue:

6.4.17.1. **Q.** Analyzed malfunctions and directed steps for completing the emergency procedure in the correct sequence without delay. Used available checklists.

6.4.17.2. **Q-.** Analyzed malfunctions. Made minor deviations in describing or accomplishing the steps of the emergency procedure. Delayed, omitted or deviated in use of the appropriate checklist. Safety was not compromised.

6.4.17.3. **U.** Failed to analyze a malfunction. Procedures were incorrect or omitted. Delayed response. Failed to use appropriate checklist.

6.4.18. Area 125--Search and Rescue Operations:

6.4.18.1. **Q.** Was fully knowledgeable of search procedures. Performed search checklist IAW applicable directives. Search performance data computed within TOLD criteria listed in area 113.

6.4.18.2. **Q-.** Limited knowledge of search procedures. Minor deviations, errors, or omissions in search checklist that would have not adversely affected mission accomplishment. Search performance data computed within TOLD criteria listed in area 113.

6.4.18.3. **U.** Had inadequate knowledge of search procedures. Was responsible for significant deviations, errors, and/or omissions in the search checklist that would have adversely affected the safe or timely accomplishment of the mission. Failed to compute TOLD card, omitted necessary corrections for existing conditions, or errors in computing performance data resulted in airspeeds and/or torque exceeding Q- criteria listed in area 113.

6.4.19. Area 126--Weight and Balance:

6.4.19.1. **Q.** Had satisfactory knowledge of aircraft limitations and weight and balance directives. Completed DD Form 365-4, Weight and Balance Clearance Form F - Transport legibly and accurately with only minor errors.

6.4.19.1.1. **Takeoff or Landing Gross Weights.** +/- 500 lbs.

6.4.19.1.2. **Percent of MAC.** +/- 0.5 percent.

6.4.19.1.3. **Aircraft Gross Takeoff Limits.** Not exceeded.

6.4.19.1.4. **Center of Gravity Limitations.** Not exceeded.

6.4.19.2. **Q-.** Limited knowledge of aircraft limitations and weight and balance directives. Completed DD Form 365-4 legibly.

6.4.19.2.1. **Takeoff or Landing Gross Weights.** +/- 501 to 1,000 lbs.

6.4.19.2.2. **Percent of MAC.** +/- 0.6 to 1.0 percent.

6.4.19.2.3. **Aircraft Gross Takeoff Limits.** Not exceeded.

6.4.19.2.4. **Center of Gravity Limitations.** Not exceeded.

6.4.19.3. **U.** Had inadequate knowledge of aircraft limitations and weight and balance directives. Failed to complete DD Form 365-4 accurately.

6.4.19.3.1. **Takeoff or Landing Gross Weights.** +/- 1,000 lbs.

6.4.19.3.2. **Percent of MAC.** +/- 1.0 percent.

6.4.19.3.3. **Aircraft Gross Takeoff Limits.** Exceeded.

6.4.19.3.4. **Center of Gravity Limits.** Exceeded.

6.4.20. **Area 127--Bold Face.** Critical:

6.4.20.1. **Q.** Provided correct and timely responses in the proper sequence.

6.4.20.2. **U.** Provided unsatisfactory/delayed response or incorrect sequence.

6.4.21. **Area 128 through 130--RESERVED.** Reserved for future use.

Chapter 7

LOADMASTER EVALUATIONS

7.1. General. The criteria contained in this chapter and **Chapter 3** apply to all loadmaster evaluations.

7.2. Objective. The examinee must satisfactorily demonstrate the ability to perform all loadmaster duties safely and effectively, including the operation of appropriate aircraft systems IAW with applicable technical orders, instructions, and directives.

7.3. Requirements:

7.3.1. **Qualification.** See **Table 2.8.** for required areas. For initial and re-qualification evaluations, the aircraft must be loaded and a mission flown to complete the evaluation. Recurring qualification and mission evaluations may be combined, crediting the RAMZ for the qualification evaluation loading requirement. If a load is not available for a recurring evaluation, an airdrop load will be static loaded upon completion of the flight portion.

7.3.2. **Mission.** See **Table 2.8.** for required areas. Mission evaluations must reflect a sampling of different events during an actual CSAR. A low-level route to either an actual airdrop or an air refueling will be flown to complete the evaluation. An NVG profile is desired, but not required.

7.4. Qualification Grading Criteria:

7.4.1. **Areas 1 through 13.** Use criteria in **Chapter 3** of this volume.

7.4.2. **Areas 131 and 132.** Use criteria for Area 132.

7.4.3. **Area 131--Life Support Equipment.**

7.4.4. **Area 132--Emergency Equipment:**

7.4.4.1. **Q.** Located, inspected, distributed and/or demonstrated the proper use of life support or emergency equipment. Knowledge of equipment was satisfactory.

7.4.4.2. **Q-.** Difficulty locating, inspecting, and/or demonstrating the proper use of life support or emergency equipment. Knowledge of equipment was adequate, but needs improvement.

7.4.4.3. **U.** Failed to inspect, distribute and/or demonstrate the proper use of life support or emergency equipment. Knowledge of equipment was unsatisfactory.

7.4.5. **Area 133--Aircraft Configuration:**

7.4.5.1. **Q.** Ensured the aircraft was properly configured to accommodate mission requirements. Familiar with various configurations as outlined in applicable directives and properly stowed configuration items that were not used.

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

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

7.4.6. **Area 134--Load Planning/Inspection:**

7.4.6.1. **Q.** Accurately planned a passenger/cargo load and met aircraft CG limits. Inspected load for proper preparation and documentation.

7.4.6.2. **Q-.** Difficulty planning a passenger/cargo load to meet CG limits. Difficulty inspecting load for proper preparation and documentation.

7.4.6.3. **U.** Unable to plan a passenger/cargo load and meet CG limits. Failed to inspect load for proper preparation and documentation.

7.4.7. Area 135--On/Off Loading Procedures:

7.4.7.1. **Q.** Correctly on/off loaded the aircraft safely and in a timely manner.

7.4.7.2. **Q-.** Difficulty correctly on/off loading the aircraft.

7.4.7.3. **U.** Failed to correctly or safely on/off load the aircraft. Loading procedures caused undue delay.

7.4.8. Area 136--Supervisory Abilities:

7.4.8.1. **Q.** Established and maintained control of personnel during loading operations. Safety was not compromised.

7.4.8.2. **Q-.** Established and maintained control of personnel, but made minor supervisory errors. Safety was not compromised.

7.4.8.3. **U.** Did not establish or maintain control of personnel and/or safety was compromised.

7.4.9. Area 137--Tie Down/Restraint:

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

7.4.9.2. **Q-.** Difficulty calculating or applying the correct amount of restraint. Did not fully understand the principals of restraint.

7.4.9.3. **U.** Failed to correctly calculate or apply the correct amount of restraint. Did not understand and could not state the principals of restraint.

7.4.10. Area 138--Winching Procedures:

7.4.10.1. **Q.** Correctly demonstrated and/or explained winching procedures.

7.4.10.2. **Q-.** Difficulty demonstrating and/or did not completely explain correct winching procedures. Safety was not compromised.

7.4.10.3. **U.** Failed to demonstrate and/or did not explain correct winching procedures. Safety was compromised.

7.4.11. Area 139--Hazardous Material:

7.4.11.1. **Q.** Understood hazardous cargo procedures. Could comply with the provisions of AFJ-MAN 24-204, *Preparing Hazardous Materials for Military Air Shipments*, and/or follow the procedures for air movement of hazardous cargo under tactical, contingency or emergency conditions.

7.4.11.2. **Q-** Understood hazardous cargo procedures, but made minor deviations stating them. Could comply with the provisions of AFJMAN 24-204, and/or follow the procedures for air movement of hazardous cargo under tactical, contingency or emergency conditions.

7.4.11.3. **U.** Did not understand hazardous cargo procedures in AFJMAN 24-204.

7.4.12. Area 140--Aircraft Limitations:

7.4.12.1. **NOTE:** Limitations may include, but are not limited to cargo floor; roller; station; compartment; pallet weight, height and nets; loading aids (ground loading ramps, truck loading ramps, bridge plates, pry bars, ramp support, shoring).

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

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

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

7.4.13. Area 141--Passenger Handling:

7.4.13.1. **Q.** Correctly briefed and performed passenger handling procedures.

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

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

7.4.14. Area 142--Border Clearance:

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

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

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

7.4.15. Area 143--Weight and Balance:

7.4.15.1. **Q.** Knowledge of aircraft limitations and weight and balance directives was satisfactory. Completed DD Form 365-4 legibly and accurately with only minor errors.

7.4.15.1.1. **Takeoff or Landing Gross Weights.** +/- 500 lbs.

7.4.15.1.2. **Percent of MAC.** +/- 0.5 percent.

7.4.15.1.3. **Aircraft Gross Takeoff Limits.** Not exceeded.

7.4.15.1.4. **Center of Gravity Limitations.** Not exceeded.

7.4.15.2. **Q-** Limited knowledge of aircraft limitations and weight and balance directives. Had difficulty completing DD Form 365-4 legibly. Form F contained errors within criteria listed below.

7.4.15.2.1. **Takeoff or Landing Gross Weights.** +/- 501 to 1,000 lbs.

7.4.15.2.2. **Percent of MAC.** +/- 0.6 to 1.0 percent.

7.4.15.2.3. **Aircraft Gross Takeoff Limits.** Not exceeded.

7.4.15.2.4. **Center of Gravity Limitations.** Not exceeded.

7.4.15.3. **U.** Knowledge of aircraft limitations and weight and balance directives was inadequate. Failed to complete DD Form 365-4 accurately.

7.4.15.3.1. **Takeoff or Landing Gross Weights.** +/- 1,000 lbs.

7.4.15.3.2. **Percent of MAC.** +/- 1.0 percent.

7.4.15.3.3. **Aircraft Gross Takeoff Limits.** Exceeded.

7.4.15.3.4. **Center of Gravity Limits.** Exceeded.

7.4.16. **Area 144--Scanner Duties:**

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

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

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

7.4.17. **Area 145--Engine Running Onload/Offload:**

7.4.17.1. **Q.** Followed/explained proper procedures for engine running on/off loading operations.

7.4.17.2. **Q-.** Difficulty following/explaining proper procedures for engine running on/off loading operations.

7.4.17.3. **U.** Did not follow/explain proper procedures for engine running on/off loading operations.

7.4.18. **Area 146--Systems Knowledge:**

7.4.18.1. **NOTE:** As a minimum, evaluate the following areas (as applicable): **QUAL:** Oxygen; Ramp and Door; Dual Rails. **MISSION:** Static line retriever(s), ADS system, and aft anchor cable supports.

7.4.18.2. **Q.** Displayed satisfactory knowledge of systems, ensuring satisfactory operation within prescribed limits. Explained proper corrective action for each type of malfunction.

7.4.18.3. **Q-.** Difficulty in displaying a satisfactory knowledge of systems. Slow to analyze problems or apply proper corrective actions.

7.4.18.4. **U.** Failed to display a satisfactory knowledge of systems. Unable to analyze problems or apply proper corrective actions.

7.5. **Mission Grading Criteria.**

7.5.1. **Areas 1 through 13.** Use criteria in **Chapter 3** of this volume.

7.5.2. **Area 147--Airdrop Rigging Procedures:**

7.5.2.1. **Q.** Correctly rigged and identified key airdrop components.

7.5.2.2. **Q-.** Difficulty rigging and/or identifying key airdrop components.

7.5.2.3. **U.** Failed to rig and/or identify key airdrop components.

7.5.3. Area 148--Joint Airdrop Inspection:

7.5.3.1. **Q.** Correctly completed the joint airdrop inspection (if required).

7.5.3.2. **Q-** Had difficulty completing the joint airdrop inspection (if required).

7.5.3.3. **U.** Failed to or had extreme difficulty completing the joint airdrop inspection (if required).

7.5.4. Area 149--Coordinated Tasks Briefing:

7.5.4.1. **Q.** Correctly briefed the coordinated tasks IAW current directives.

7.5.4.2. **Q-** Had difficulty briefing the coordinated tasks IAW current directives.

7.5.4.3. **U.** Failed to accomplish the coordinated tasks briefing IAW current directives.

7.5.5. Area 150--Airdrop Knowledge:

7.5.5.1. **NOTE:** Evaluate the following areas: Personnel (Static line and High Altitude Low Opening (HALO)), RAMZ/Door bundle, SATB and any other mission specific airdrop event. Unless an aerial refueling is performed, mission performance in one area other than SATB will be evaluated. The other areas will be verbally evaluated.

7.5.5.2. **Q.** Correctly demonstrated airdrop procedures for the event being flown, if performed. Knowledge of and airdrop load information and procedures for other types of loads were satisfactory.

7.5.5.3. **Q-** Had difficulty demonstrating and/or understanding airdrop procedures and airdrop load information.

7.5.5.4. **U.** Could not demonstrate and/or understand airdrop procedures and airdrop load information.

7.5.6. Area 151--NVG Usage/Limitations:

7.5.6.1. **Q.** Correctly described the use/limitations of night vision goggles (NVGs). Properly pre-flighted, handled, and used NVGs during the flight.

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

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

7.5.7. Area 152--Air Refueling:

7.5.7.1. **NOTE:** An actual aerial refueling will be demonstrated unless a mission airdrop is performed.

7.5.7.2. **Q.** Knowledge of aerial refueling procedures was satisfactory. During fuel transfer operations, relayed light signals without errors, deviations or omissions. Transmitted clear, concise, timely information to the pilot concerning helicopter position throughout the refueling maneuver.

Ensured emergency equipment was properly configured for the aerial refueling. Successfully demonstrated breakaway procedures or verbally evaluated to the satisfaction of the evaluator.

7.5.7.3. **Q-** Limited knowledge of aerial refueling procedures. Minor deviations, errors or omissions in relaying light signals during operations. Transmissions concerning helicopter position were not always clear and concise. At times used non-standard terminology. Slight deviations and errors in configuring emergency equipment for the aerial refueling. Emergency breakaway performed with minor discrepancies that did not affect safety or verbally evaluated event with minor discrepancies noted.

7.5.7.4. **U.** Had inadequate knowledge of aerial refueling procedures. Significant deviations, errors or omissions in relaying light signals during operations. Transmissions concerning helicopter position were unclear or erroneous. Failed to configure emergency equipment properly for the aerial refueling. Performed emergency breakaway with major discrepancies or verbally evaluated event with major errors noted.

7.5.8. **Area 153--CSAR/Search Scanning Procedures:**

7.5.8.1. **Q.** Knowledge of search scanning procedures was satisfactory.

7.5.8.2. **Q-** Limited knowledge of search procedures. Minor difficulties in keeping scanners motivated. Did not adversely affect the mission.

7.5.8.3. **U.** Knowledge of search procedures was unsatisfactory. Adversely affected the mission or jeopardized safety.

7.5.9. **Area 154--Pyrotechnics:**

7.5.9.1. **Q.** Had thorough knowledge of pyrotechnics. Could identify the appropriate pyrotechnics for the mission. Knowledge of ground and in-flight emergency procedures was satisfactory.

7.5.9.2. **Q-** Limited knowledge of pyrotechnics. Did not always correctly identify the most efficient pyrotechnics for the mission. Some difficulty in jettisoning, but safety was not affected.

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

7.5.10. **Area 155--Flare Launcher:**

7.5.10.1. **Q.** Satisfactorily demonstrated proper management and operation of systems. Correctly identified and located system components, explained and related the functions, and specified the limitations. Stated correct system status and its effect on related systems. Recognized malfunctions and applied proper corrective action.

7.5.10.2. **Q-** Minor deviations in management or operation of systems. Minor omissions or deviations in identifying, locating, explaining, or relating system functions. Stated correct system status, but could not determine its effect on related systems. Delay in recognizing malfunctions and/or applying proper corrective action.

7.5.10.3. **U.** Performed improper management or operation of the system. Could not identify, locate, or explain system functions and limitations. Could not determine status of the system or its effect on related systems. Failed to recognize malfunctions and/or apply corrective action.

7.5.11. **Areas 156 through 159--RESERVED.** Reserved for future use.

Chapter 8

AIRBORNE COMMUNICATIONS SPECIALIST (ACS) EVALUATIONS

8.1. General. The criteria contained here and in [Chapter 3](#) apply to all ACS flight evaluations.

8.2. Objective. The examinee must satisfactorily demonstrate the ability to perform required ACS duties safely and effectively, including the operation of appropriate aircraft/mission specific system IAW applicable flight manuals, instructions and directives.

8.3. Requirements. Evaluations must reflect a sampling of different events during an actual CSAR. An NVG profile is desired, but not required.

8.3.1. **ACS Mission/Qualification Evaluations.** See [Table 2.9](#) for required areas.

8.4. ACS Grading Criteria:

8.4.1. **Areas 1 through 13.** Use criteria in [Chapter 3](#) of this volume.

8.4.2. Area 160--Life Support Equipment:

8.4.2.1. **Q.** Could locate, inspect, distribute and/or demonstrate the proper use of life support equipment.

8.4.2.2. **Q-.** Had difficulty locating, inspecting, and/or demonstrating the proper use of life support equipment.

8.4.2.3. **U.** Failed to inspect, distribute, and/or demonstrate the proper use of life support equipment.

8.4.3. Area 161--Handling Classified Material. Critical:

8.4.3.1. **Q.** Knowledge of directives governing storage, handling and destruction of classified/Communication Security (COMSEC) material was satisfactory. Applied and ensured compliance with governing directives. Used sound judgment in all aspects of receiving, storing and destroying classified/COMSEC material.

8.4.3.2. **U.** Lacked knowledge of directives governing storage, handling and destruction of classified/COMSEC material. Did not apply and/ or did not ensure others complied with governing directives. Lack of judgment in receiving, storing or destroying classified/COMSEC material.

8.4.4. Area 162--CSAR Communications Support:

8.4.4.1. **Q.** Thorough knowledge of terms, mission planning, communications, chart preparation and checklists associated with CSAR. Applied knowledge of mission planning to assist in mission accomplishment safely. Complied with published procedures. Identified and tuned proper frequencies in a timely manner. Monitored and responded to transmissions in a timely manner. Transmitted clear, concise information using proper terminology. Ensured complete Communication Electronic Operation Instructions (CEOI) was developed for command/control and tactical objective area.

8.4.4.2. **Q-.** Limited knowledge of terms, mission planning, communications, chart preparation and checklists associated with CSAR. Applied knowledge of mission planning to assist in mission

accomplishment safely. Complied with most published procedures. Identified and tuned proper frequencies, but not in a timely manner. Monitored and responded to transmissions but not in a timely manner. Transmitted clear, concise information using proper terminology. CEOI had minor errors, which did not affect safety or mission/task accomplishment.

8.4.4.3. **U.** Lacked knowledge of terms, mission planning, communications, chart preparation and checklists associated with CSAR. Lack of knowledge of mission planning affected mission/task safety. Failed to comply with published procedures. Failed to identify proper frequencies. Missed incoming transmissions or responses were erroneous or incorrect. CEOI had major errors, which affected mission/task safety.

8.4.5. **Area 163--Knowledge of Route Communications:**

8.4.5.1. **Q.** Complete familiarity with FLIP en route, tactical en route and objective area procedures, frequencies and radio requirements. Ensured complete CEOI was developed for ATC/ICAO, command/control and tactical objective area. Used sound judgment in developing communications plan to aid in mission safety and completion.

8.4.5.2. **Q-.** Limited knowledge of FLIP en route, tactical en route and objective area procedures, frequencies and radio requirements. CEOI had minor errors not critical to mission accomplishment. Selection of times/locations for transmissions indicated lack of awareness of safety/security for aircraft but did not compromise mission accomplishment.

8.4.5.3. **U.** Lacked knowledge of FLIP en route, tactical en route and objective area procedures, frequencies and radio requirements. Major errors in CEOI compromised mission safety and/or accomplishment. Lack of judgment in selecting radio transmission times/locations such that mission could have been jeopardized.

8.4.6. **Area 164--ICAO Operating Procedures:**

8.4.6.1. **Q.** Knowledge and understanding of ICAO publications and procedures was thorough. Complied with published procedures. Transmitted clear, concise information using proper format/terminology. Identified and tuned proper frequencies in a timely manner. Monitored and responded to transmissions in a timely manner.

8.4.6.2. **Q-.** Limited knowledge and understanding of ICAO publications and procedures. Complied with most published procedures. Transmissions were not always clear and concise. At times used non-standard formats/terminology. Slow to identify and tune proper frequencies. Missed no more than 5% of incoming transmissions and failed to respond in a timely manner.

8.4.6.3. **U.** Lacked knowledge or understanding of ICAO publications and procedures. Failed to comply with published procedures. Transmissions were unclear or erroneous. Used non-standard terminology. Failed to identify proper frequencies. Missed more than 5 percent of incoming transmissions or response was incorrect or inappropriate.

8.4.7. **Area 165--Military Operating Procedures:**

8.4.7.1. **Q.** Thorough knowledge and understanding of command and control, and of communications publications, and procedures. Complied with published procedures. Transmitted clear, concise information using proper terminology. Identified and tuned proper frequencies in a timely manner. Monitored and responded to transmissions in a timely manner.

8.4.7.2. **Q-** Limited knowledge and understanding of command, control and communications publications and procedures. Complied with most published procedures. Transmissions were not always clear and concise, with non-standard terminology. Identified and tuned proper frequencies but not in a timely manner. Missed no more than 5 percent of transmissions designated for the aircraft or failed to respond in a timely manner.

8.4.7.3. **U.** Lacked knowledge and understanding of command, control and communications publications and procedures. Failed to comply with published procedures. Transmissions were unclear or erroneous, with non-standard terminology. Failed to identify proper frequencies. Missed more than 5 percent of transmissions designated for the aircraft; response was incorrect or inappropriate.

8.4.8. **Area 166--Search/Orbit/Intercept Procedures:**

8.4.8.1. **Q.** Demonstrated thorough knowledge of types of search pattern and intercepts, search/orbit altitudes and procedures, and communications as outlined in applicable directives. Was easily able to locate information in applicable directives. Applied knowledge in assisting mission/task accomplishment.

8.4.8.2. **Q-** Limited knowledge of types of search patterns and intercepts, search/orbit altitudes and procedures, and communications as outlined in applicable directives. Had difficulty in finding information in applicable directives. Was unable to apply knowledge in assisting mission/task accomplishment.

8.4.8.3. **U.** Inadequate knowledge of types of search patterns and intercepts, search/orbit altitudes and procedures, and communications as outlined in applicable directives. Could not find information in applicable directives. Negatively affected mission accomplishment.

8.4.9. **Area 167--Authentication Procedures. Critical:**

8.4.9.1. **Q.** Knowledge of authentication materials and procedures was thorough. When required, authentication was correct and timely. Correct authentication materials were always readily at hand.

8.4.9.2. **U.** Knowledge of authentication materials and procedures was unsatisfactory. Authentication was incorrect or excessively slow. Authentication materials were not readily available or were incorrect.

8.4.10. **Area 168--Crypto System Operations:**

8.4.10.1. **Q.** Knowledge of applicable cryptological systems was thorough. Full knowledge of keying devices and materials. With use of a guide, was able to key all systems without error. Knowledgeable of HAVE QUICK system and initialization procedures.

8.4.10.2. **Q-** Was familiar with applicable cryptological systems, keying devices and materials. With use of guide, was able to key most systems with minor error. Knowledgeable of HAVE QUICK system but has difficulty during initialization procedures.

8.4.10.3. **U.** Lacked knowledge of applicable cryptological systems, keying devices or keying materials. Unable to key most systems without error. Lacked knowledge of HAVE QUICK system or required assistance in initialization procedures.

8.4.11. **Area 169--Crypto Material Requirements:**

8.4.11.1. **Q.** Identified, requested and obtained all cryptological material required for the mission.

8.4.11.2. **Q-.** Identified cryptological material required for mission, but was slow in requesting/obtaining material or did so only after being prompted.

8.4.11.3. **U.** Failed to identify, request or obtain all cryptological materials required for the mission.

8.4.12. **Area 170--Frequency Management:**

8.4.12.1. **Q.** Knowledge of frequencies and associated agencies, which radios to use and when to change frequencies was thorough. Complied with all ICAO, ATC, ACP, JANAP, COMSEC directives, CEOI, and interphone procedures. Applied knowledge to stay ahead of aircraft. Used excellent judgment in when and how to communicate so that essential crew communications are not interrupted. Safety of aircraft/mission not compromised by blocking critical transmissions.

8.4.12.2. **Q-.** Limited knowledge of frequencies and associated agencies, which radios to use and when to change frequencies; however, could locate the information in a reasonable time. Complied with most ICAO, ATC, ACP, JANAP, COMSEC directives, CEOI, and interphone procedures. Demonstrated limited knowledge to keep up with aircraft. Minor errors in timing of communications. Minor interruptions of other crew positions did not detract from safety or task accomplishment.

8.4.12.3. **U.** Had unsatisfactory knowledge of frequencies and associated agencies, which radios to use and when to change frequencies. Did not comply with ICAO, ATC, ACP, JANAP, COMSEC directives, CEOI or interphone procedures. Numerous omissions in complying with directives. Was unable to keep up with aircraft. Made transmissions without regard to other radio/interphone activities. Missed/incorrect transmissions or interruption of other transmissions/receptions compromised safety or mission/task accomplishment.

8.4.13. **Area 171--Equipment Troubleshooting:**

8.4.13.1. **Q.** Knowledge of radio communication and navigation equipment was thorough. Able to analyze and isolate malfunctions. Immediately identified work-around solutions if they existed.

8.4.13.2. **Q-.** Had an adequate knowledge of radio communications and navigation equipment. Occasionally able to identify work-around solutions if they existed.

8.4.13.3. **U.** Lacked knowledge of radio communications and navigation equipment. Was unable to identify malfunctioning equipment.

8.4.14. **Area 172--Knowledge/Operation of DF Equipment:**

8.4.14.1. **Q.** Thorough knowledge and understanding DF equipment, its subsystems, and procedures in applicable instructions and manuals. Operated without hesitation throughout the mission. Initial Acquisition of Signal, run-in and headings were timely. Properly called station passage. Able to analyze/isolate malfunctions and immediately develop work-around solutions.

8.4.14.2. **Q-.** Limited knowledge and understanding of DF equipment, its subsystems, and procedures outlined in applicable instructions and manuals. Operated with some hesitation throughout the mission. Initial Acquisition of Signal, run-in and headings were slow. Station passage was early or late. Slow to analyze/isolate malfunctions, or develop work-around solutions.

8.4.14.3. **U.** Lacked knowledge and understanding DF Equipment, its subsystems, or procedures outlined in applicable instructions and manuals. Operated incorrectly throughout the mission. Initial Acquisition of Signal, run-in, and headings were confusing. Station passage was significantly early or late. Did not properly analyze/isolate malfunctions or develop work-around solutions.

8.4.15. Areas 173--Systems Knowledge:

8.4.15.1. **NOTE:** Evaluate the following areas: SCNS; HF, VHF, UHF equipment; satellite communications, secure communications; FM radio(s); interphone system; public address; IFF/SIF equipment; navigation equipment; emergency locator beacon (ELT).

8.4.15.2. **Q.** Thorough knowledge of system operation, to include operating limits. Operated/monitored system operation and warning devices to maintain secure operation. Able to quickly locate published information in manuals and instructions for those items not requiring memorization.

8.4.15.3. **Q-.** Limited knowledge of system operation, to include operating limits. Operated/monitored system but did not immediately apply appropriate procedure(s) for malfunctions. Some difficulty in locating published information in manuals and instructions for items not requiring memorization.

8.4.15.4. **U.** Lacked knowledge of system operation, to include operating limits. Could not correctly operate/monitor system or did not apply appropriate procedure(s) for malfunctions. Could not locate published information in manuals and instructions for items not requiring memorization.

8.4.16. Area 174--DZ/LZ Communications:

8.4.16.1. **Q.** Monitored aircraft position; well ahead and prepared to contact the DZ/LZ at the earliest possible time. Always had multiple radio frequencies available to establish contact. Ensured contact throughout objective area operations. Communications were clear and concise.

8.4.16.2. **Q-.** Monitored aircraft position and was prepared to make contact with the DZ/LZ prior to arrival. Usually had multiple radio frequencies available to establish contact. Ensured contact throughout objective area operations. Communications were clear but excessively long.

8.4.16.3. **U.** Failed to monitor aircraft position; not prepared to make contact with the DZ/LZ prior to arrival. Failed to have multiple radio frequencies available to establish contact. Did not ensure contact throughout objective area operations. Communications were not clear and concise.

8.4.17. Area 175--NVG Usage/Limitations:

8.4.17.1. **Q.** Correctly described the use/limitations of night vision goggles (NVGs). Properly preflighted, handled, and used NVGs during the flight.

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

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

8.4.18. Area 176--Scanner Duties:

8.4.18.1. **Q.** Thorough knowledge of scanning procedures for threats, calling out threats and appropriate aircraft defensive maneuvers. Assisted loadmaster as required. Understood appropriate defensive countermeasures.

8.4.18.2. **Q-.** Limited knowledge of scanning procedures for threats, calling out threats or appropriate aircraft defensive maneuver. Assisted loadmaster when prompted. Had some understanding of appropriate defensive countermeasures.

8.4.18.3. **U.** Lacked knowledge of scanning procedures for threats, calling out threats or appropriate aircraft defensive maneuver. Did not assist loadmaster. Lacked understanding of appropriate defensive countermeasures.

8.4.19. **Areas 177 through 180--RESERVED.** Reserved for future use.

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DCS, Air and Space Operations

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

Abbreviations and Acronyms

ACC—Air Combat Command

ACSMQR—Airborne Communication System Mission Qualification Rescue

AFI—Air Force Instruction

AGL—Above Ground Level

ARCP—Air Refuel Control Point

AFRC—Air Force Reserve Command

ARA—Airborne Radar Approach

ASR—Airport Surveillance Radar

ATA—Actual Time Of Arrival

ATD—Aircrew Training Device

BAI—Backup Aircraft Inventory

CARP—Computed Air Release Point

CC—Commander

CDS—Container Delivery System

CE—Circular Error

CEOI—Communication Electronic Operating Instructions

COMSEC—Communications Security

CP—Copilot

CRM—Cockpit Resource Management

CSAR—Combat Search And Rescue

DEG—Degree

DF—Direction Finding

DH—Decision Height

DR—Dead Reckoning

DOTV—Director Of Operations Training Standardization Evaluation

DZ—Drop Zone

ELT—Emergency Locator Transmitter

EP—Emergency Procedures

EPE—Emergency Procedures Evaluation

ETP—Estimated Time Of Parity

ETA—Estimated Time Of Arrival

FCIF—Flight Crew Information File

FE—Flight Engineer

FEMQR—Flight Engineer Mission Qualification Rescue

FTU—Formal Training Unit

GPS—Global Positioning System

HALO—High Altitude Low Opening

HHQ—Higher Headquarters

HQ—Headquarters

IAW—In Accordance With

ICA—International Civil Aviation Organization

IFF—Identification, Friend Or Foe

ILS—Instrument Landing System

INS—Inertial Navigation System

IP—Instructor Pilot

IRC—Instrument Refresher Course

KIAS—Knots Indicated Airspeed

LMMQR—Loadmaster Mission Qualification Rescue

LZ—Landing Zone

MAJCOM—Major Command

MDA—Minimum Descent Altitude

MDS—Mission Design Series

MFLMETO—Minimum Field Length For Maximum Effort Takeoff

MSN—Mission

N—Navigator

N/A—Not Available

NAF—Numbered Air Force

NM—Nautical Mile

NMQR—Navigator Mission Qualification Rescue

N/N—No-Notice

NOTAM—Notice To Airman

NVG—Night Vision Goggle

OG—Operations Group

OGV—Operations Group Standardization/Evaluation

OPR—Office Of Primary Responsibility

P—Pilot

PAR—Precision Approach Radar

PJ—Individual Pararescue Specialist

PMQR—Pilot Mission Qualification Rescue

QUAL—Qualification

Q—Qualified

R—Required

RAMZ—Rigging Alternate Method Zodiac

SATB—Standard Airdrop Training Bundle

SCNS—Self-Contained Navigation System

SIM—Simulator

SQ—Squadron

STAN/EVAL—Standardization/Evaluation

TA—Terrain Avoidance

TAS—True Airspeed

TOLD—Take-Off And Landing Data

U—Unqualified

VDP—Visual Descent Point

VFR—Visual Flight Rules

VMCA—Velocity Minimum Control Authority

VOR—Very High Frequency Omnidirectional Range Station

WST—Weapons System Trainer

Terms

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

Major Error—Departure from standard procedures. Performing incorrect actions or recording incorrect information. Error detracted from mission accomplishment, adversely affected use of equipment, or

violated safety.

Minor Error—Departure from standard procedures. Performing incorrect actions or recording incorrect information. Error did not detract from mission accomplishment, adversely affect use of equipment, or violate safety.