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Flying Operations

U-2--AIRCREW EVALUATION CRITERIA

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This volume establishes criteria and procedures for U-2 flight evaluations, implements AFPD 11-2, *Aircrew Operations*, AFPD 11-4, *Aviation Service*, and references AFI 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Procedures*, and AFI 11-202V2, *Aircrew Standardization/Evaluation Program.* It applies to all U-2 units. This AFMAN applies to all military and civilian personnel in the Regular Ar Force who operate the U-2 aircraft. It does not apply to Air National Guard (ANG) and Air Force Reserve (AFR) personnel. This Manual requires the collection and or maintenance of information protected by the Privacy Act of 1974 authorized by Title 10 United States Code (USC), Chapter 857, Title 37 USC 301a *Incentive Pay*, Public Law (PL) 92-204, Section 715 *Appropriations Act for 1973*, PLs 93-570 *Appropriations Act for 1974*, 93-294 *Aviation Career Incentive Act of 1974*, and Executive Order 13478, *Amendments to Executive Order 9397 Relating to Federal Agency Use of Social Security Numbers*. The applicable SORN F011 AF XO A, Aviation Resource Management System (ARMS) is available at: **http://dpclo.defense.gov/Privacy/SORNs.aspx**. Major Commands (MAJCOMs), Direct Reporting Units (DRUs), and Field Operating Agencies (FOAs) may forward proposed MAJCOM/ DRU/FOA-level supplements to this volume through ACC/A3TV to AF/A3O-AI for approval prior to publication. After approved and published, MAJCOM/ DRU/FOA OPR will provide copies of those supplements to ACC/A3TV and the user MAJCOM/DRU/FOA offices of primary responsibility (OPRs). Field units below MAJCOM/DRU/FOA level will forward copies of their supplements to this publication to their parent MAJCOM/DRU/FOA OPR for pre-publication review. NOTE: The terms DRU and FOA as used in this paragraph refer only to those

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SUMMARY OF CHANGES

This document has been substantially revised and should be thoroughly reviewed. Tiered waiver guidance has been added IAW AFI 33-360.

Chapter 1

ROLES AND RESPONSIBILITIES

1.1. Flight Examiners (FEs):

1.1.1. should exercise judgment when assigning subjective area grades, when assigning the overall qualification level, and when evaluating in situations not covered explicitly by this document.

1.1.2. will brief the examinee on the purpose, conduct, and extent of each evaluation. **(T-3)**.

1.1.3. may assist in evaluation mission planning/briefing as tasked by the examinee.

1.1.4. may evaluate from any flight position (to include chase) necessary to conduct a thorough evaluation.

1.1.5. will apply the grading criteria contained in **Chapter 3**, as applicable. **(T-2)**.

1.1.6. will debrief the examinee's overall rating, specific deviations, area grades assigned (if other than qualified), and any required additional training, at a minimum. **(T-3)**.

1.1.7. should use all electronic means available to reconstruct, evaluate, and adequately debrief the mission.

1.2. Examinees:

1.2.1. will accomplish required flight planning in accordance with the flight position assigned during the evaluation, furnishing FEs a copy of necessary mission data and mission materials, if appropriate. **(T-2).**

1.2.2. will brief and fly the desired airspeed/angle-of-attack (AOA) for approaches and simulated flameout (SFO) patterns. **(T-3).**

Chapter 2

EVALUATION REQUIREMENTS

2.1. General.

2.1.1. Publications Check/Currency of Flight Publications. All evaluations include a currency and accuracy check on all issued publications/checklists. Unit commanders may specify additional publications to be evaluated in the unit supplement to AFI 11-202V2.

2.1.2. Cockpit/Crew Resource Management (CRM). CRM skills are integral to all phases of flight. Evaluations include the assessment of CRM skills using specific CRM grading under Area 37 in accordance with (IAW) AFI 11-290, *Cockpit/Crew Resource Management*. CRM skills are listed on the AF IMT 4031, *CRM Skills Criteria Training/Evaluation Form*. The Stan/Eval trend program can be used to measure the effectiveness of CRM training.

2.1.3. Combined Evaluations. With the approval of the OG/CC, the instrument/qualification (INSTM/QUAL), or QUAL, and mission (MSN) evaluation may be combined as a single evaluation. This option is intended only for experienced pilots.

2.1.3.1. Combined evaluations include all current QUAL (or INSTM/QUAL) and MSN evaluation requirements, including prequisites.

2.1.3.2. One event may satisfy multiple types of emergency procedures evaluations (EPEs), as long as the event includes the required areas for both evaluations.

2.1.4. Required Graded Areas. Required graded areas are annotated in **Tables 2.1** and **2.2**, respectively. When it is impractical or impossible to accomplish a required evaluation area in-flight, an alternate method (i.e., simulator, aircrew training device (ATD), or verbal examination) may be used in order to complete the evaluation. FEs will document the reason and type of alternate method used in the "Additional Comments" portion of the AF Form 8, *Certificate of Aircrew Qualification.* **(T-2)**. If the FE determines the required item cannot be adequately evaluated by an alternate method, an additional flight is required to complete the evaluation. In **Tables 2.1** and **2.2**:

2.1.4.1. Areas annotated with an "R" are necessary items for that event.

2.1.4.2. Areas indicated with an "R2" require evaluation of at least two of the items under the associated section.

2.1.5. For non-instructor evaluations in the TU-2S, the FE occupies the rear cockpit. For Instructor (INSTR) evaluations, the FE occupies the front cockpit.

2.2. Qualification (QUAL) Evaluations.

2.2.1. Procedures.

2.2.1.1. QUAL evaluations may be administered on any compatible training mission.

2.2.1.2. On QUAL evaluations, the examinee accomplishes all mission planning.

2.2.2. Minimum Prequisites. The minimum prequisites for a QUAL evaluation are:

2.2.2.1. a boldface examination;

2.2.2.2. a closed book examination;

2.2.2.3. an open book examination; and

2.2.2.4. EPE.

2.3. Mission (MSN) Evaluations.

2.3.1. Procedures.

2.3.1.1. Squadron Commanders ensure that FEs administer initial MSN evaluations in the primary design operational capability (DOC) of the unit, unless that unit has a different assigned contingency for which to prepare.

2.3.1.2. FEs:

2.3.1.3. should tailor MSN evaluations to represent a primary unit Designed Operational Capability (DOC) tasking. An assigned combat/contingency tasking (e.g. a mission set representing the Area of Responsibility to which the examinee will initially deploy) may be substituted, with SQ/CC approval.

2.3.1.4. should include material from AFI33-360 6.6.1.4,Publications And Forms Management, and CJCS 3250.01 (Classified) Intelligence Surveillance and Reconnaissance Management (U) and ensure examinees have a working knowledge of the publications.

2.3.1.5. may include excerpts from actual operational and contingency plans, airspace control plans, and communications plans in MSN evaluation scenarios.

2.3.1.6. will evaluate examinees in the position of their highest certification, even if a portion of the evaluation is flown in another position. **(T-3)**.

2.3.1.7. may allow wingman to brief and/or lead certain phases of the mission, but should not evaluate flight leadership.

2.3.1.8. should use a portable aviation Global Positioning System (GPS) to aid in reconstructing the mission and assessing the examinee's performance.

2.3.1.9. may use ground-based video recording devices and GPS data to reconstruct and evaluate the flight.

2.3.1.10. For MSN evaluations, a mission planner provides the mission kit of study and review. The examinee is responsible for ensuring the data used in the aircraft is accurate for the designated mission, but will not be graded on those products computed by others.

2.3.1.11. Evaluations during exercises are encouraged.

2.3.1.12. Evaluations during contingency/combat deployments should only be given as a last resort in order to maintain mission qualification status.

2.3.1.13. Basic Mission Capable (BMC) aircrew should only be evaluated on missions routinely performed.

2.3.1.14. MSN evaluations flown from home station may be satisfied on either a Higher Headquarters (HHQ) mission (i.e. operational or exercise mission) or training sortie.

2.3.1.15. IF a HHQ mission is not available, the flight profile should resemble an operational mission.

2.4. Formal Course Evaluations.

2.4.1. Syllabus evaluations should be flown IAW syllabus mission profile guidelines, or on a mission profile developed from syllabus training objectives. FEs may modify course guidelines based on other factors, such as local operating considerations, in order to complete the evaluation.

2.4.2. Syllabus tasks not specifically addressed in the criteria in **paragraphs 2.5 - 3.6.7.10** below should be evaluated using criterion reference objectives (CRO) from the appropriate syllabus.

2.5. Instructor Evaluations.

2.5.1. Initial Instructor (INIT INSTR) Evaluations. To initially qualify as an instructor in the U-2, the pilot must successfully complete an initial INSTR evaluation. This is a one-time evaluation during which the examinee must demonstrate the ability to instruct in a selected phase of the unit's mission. Except for requirements outlined under Area 33, Instructor Performance, in **Table 2.1**, specific profiles and/or events are determined by the FE.

2.5.2. On subsequent QUAL and MSN evaluations, the examinee's ability to instruct is assessed by the FE during the course of the evaluation.

2.5.3. U-2S (Phase II) Instructor Evaluations.

2.5.3.1. Initial, requalification and recurring INSTR evaluations are administered in the mobile vehicle, which is the high speed chase car that provides safety, supervision, coordination and assistance to the pilot especially during landing.

2.5.3.2. Requalification INSTR evaluations are documented on the AF Form 8. For SQ/CC-directed or syllabus-directed requalification programs which include a flight evaluation, document the INSTR evaluation on the same AF Form 8 as the flight evaluation.

2.5.3.3. Recurring INSTR evaluations in the mobile vehicle are not required as long as instructor duties are sampled on recurring QUAL and MSN evaluations.

2.5.4. TU-2S (Phase III) Instructor Evaluations.

2.5.4.1. Initial and requalification INSTR evaluations are administered in the TU-2S. Evaluations include satisfactory demonstration of overhead, straight-in and emergency patterns and landings flown from the rear cockpit.

2.5.4.2. An examinee may update his or her QUAL evaluation concurrent with an INIT INSTR evaluation, provided all prequisites are accomplished.

2.5.4.3. Requalification INSTR evaluations are documented on the AF Form 8 and may be combined with a recurring QUAL or MSN evaluation if flown in the TU-2S.

2.5.4.4. Recurring INSTR evaluations are not required. Instructor duties are sampled on recurring QUAL evaluations flown from the rear cockpit of the TU-2S, and recurring MSN evaluations (normally flown in the U-2S).

2.5.4.5. Area 174--Approach to Stall/Stall Recovery is accomplished on all TU-2S instructor initial and periodic evaluations.

2.6. Formal Training Unit (FTU) Instructor Evaluations. FTU Instructor Pilot (IP) mission evaluation profiles are normally flown IAW the formal course syllabus for any mission that the IP is qualified to instruct. The only required items for a FTU IP mission check are those items required by the syllabus, for the specific syllabus sortie flown.

2.7. Instrument (INSTM) Evaluations. U-2 pilots normally accomplish Instrument (INSTM) evaluations in the Companion Trainer Program (CTP) aircraft. Pilots not participating in the CTP accomplish INSTM evaluations in the front seat of the TU-2S.

Table 2.1. Aircrew Evaluation Grading Areas.

AREA	NOTE	AREA TITLE	PILOT QUAL	PILOT MSN	MOBILE (Note 5)
AIRCREW EVALUATION CRITERIA - GENERAL					
1	2, 5	MISSION PLANNING	R	R	R
2	2, 5	BRIEFING (if applicable)	**R**	**R**	**R**
3	2, 5	GROUND OPS	**R**	**R**	**R**
4		TAKEOFF	**R**	**R**	
6		DEPARTURE	**R**	**R**	
7		LEVEL OFF	**R**	**R**	
8		CRUISE/NAVIGATION		**R**	
10		IN-FLIGHT CHECKS	**R**	**R**	
12		COMMUNICATION/NAVIGATION /IFF (CNI)	**R**	**R**	
14	2, 4	AIRWORK (FLIGHT CHARACTERISTICS DEMO)	**R**		
16	5	EQUIPMENT OPERATIONS	**R**	**R**	**R**
18		TACTICAL ARRIVAL			
19		GO-AROUND			

21		EMERGENCY TRAFFIC PATTERNS	**R**		
23		NORMAL VFR PATTERN/APPROACH	**R**		
25	1	LANDING	**R**	**R**	
29		KNOWLEDGE	**R**	**R**	**R**
30	Critical	AIRMANSHIP/ SITUATIONAL AWARENESS	**R**	**R**	
31	Critical	SAFETY	**R**	**R**	**R**
32	Critical	FLIGHT DISCIPLINE	**R**	**R**	
33		INSTRUCTOR PERFORMANCE (if applicable)	**R**	**R**	**R**
37		COCKPIT/CREW RESOURCE MANAGEMENT		**R**	
INSTRUMENTS					
61	3	HOLDING	**R**		
62	3	INSTRUMENT PENETRATION/ENROUTE DESCENT	**R**		
64	3	NONPRECISION APPROACH	**R**		
65	3	PRECISION APPROACH (PAR)	**R**		
66	3	PRECISION APPROACH (ILS)	**R**		
67	3	MISSED APPROACH/CLIMB OUT	**R**		
68	3	CIRCLING/SIDESTEP APPROACH	**R**		
69		INSTRUMENT CROSS-CHECK	**R**		
173	4	HIGH SPEED TAXI DEMO	**R**		

174	4	APPROACH TO STALL RECOVERY/STALL RECOVERY	**R**		
MISSION					
85		RADIO USE/TACTICAL COMMUNICATION (PRIMARY/BACKUP COMBAT/SRO COMM PROCEDURES)		**R**	
88		TACTICAL NAVIGATION (DR/PILOTAGE NAVIGATION)		**R**	
89		INGRESS (PRIMARY/BACKUP COMBAT/SRO NAV PROCEDURES)		**R**	
94		EVASIVE ACTION/THREAT REACTIONS		**R**	
96		ELECTRONIC ATTACK (EA)/ELECTRONIC PROTECTION (EP)/ALL ASPECT MISSILE DEFENSE (AAMD)			
97		PAYLOAD OPERATION		**R**	
295		INS ORBIT EXERCISE		**R**	
MOBILE					
1036	5	RUN-INS			**R**
1037	5	CALLS			**R**

Notes:

1. For QUAL evaluations, landings are required from both normal and no-flap patterns. At least one landing must be made no-voice.
2. Required on initial TU-2S INSTR evaluations only.
3. For TU-2S INSTR evaluations, a sampling of instrument approaches/procedures is desired.

4. Flight Characteristics Demo, Approach to Stall/Stall Recovery, and High Speed Taxi Demo are accomplished on all TU-2S initial and periodic instructor evaluations.
5. Items for mobile evaluations are evaluated only on INIT INSTR evaluations.

2.8. Emergency Procedures Evaluations (EPEs).

2.8.1. General. The EPE should be conducted in a flight simulator or other advanced training device to the maximum extent possible. If the Mission Procedures Trainer (MPT) is not available, a verbal EPE is acceptable. This option is documented on the AF Form 8.

2.8.2. Grading criteria for each required item are listed in **Chapter 3**.

2.8.3. The following graded areas are required on all EPEs:

2.8.3.1. Aircraft General Knowledge,

2.8.3.2. Emergency Procedures/Aircraft Malfunctions,

2.8.3.3. The FE will evaluate a minimum of two emergency procedures per the pre-takeoff, takeoff, inflight, and landing phases of flight. **(T-3)**.

2.8.3.4. The FE will evaluate all boldface items. **(T-3).**

2.8.3.5. Unusual Attitude Recoveries,

2.8.3.6. and Cockpit/Crew Resource Management (CRM).

2.8.4. The following additional graded areas are required on all INSTM and/or QUAL EPEs:

2.8.4.1. Alternate/Divert Airfields. This area includes a minimum of one approach at a divert/alternate airfield, other than home base.

2.8.5. The following items are required on all MSN EPEs, as the FE tailors the MSN evaluation scenario to the unit tasking/mission:

2.8.5.1. Weapons System/Payload Operation (Sensor and Data Link System Operation),

2.8.5.2. Aircraft General Knowledge (Threat Knowledge),

2.8.5.3. EA/EP/AAMD (including use of the Electronic Warfare System (EWS)), and

2.8.5.4. Ingress (Primary/Alternate Communications/Navigation Procedures/Sensitive Reconnaissance Operations (SRO)).

Table 2.2. EPE Grading Areas.

AREA	NOTES	AREA TITLE	QUAL	MSN
GENERAL				
29		AIRCRAFT GENERAL KNOWLEDGE	**R**	**R**

37		COCKPIT/CREW RESOURCE MANAGEMENT	**R**	**R**
301		EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (GENERAL)		
305		WEAPONS SYSTEM/PAYLOAD OPERATION		**R**
PRE-TAKEOFF			**R2**	**R2**
321		HYDRAULIC EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (PRE-TAKEOFF)		
331		ELECTRICAL EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (PRE-TAKEOFF)		
341		FUEL EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (PRE-TAKEOFF)		
351		ENVIRONMENTAL CONTROL SYSTEM (ECS)/OXYGEN EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (PRE-TAKEOFF)		
361		ENGINE EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (PRE-TAKEOFF)		
362		FIRE		
364		HOT START		
366		HUNG START/NO START/TAILPIPE FIRE		
371		AVIONICS EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (PRE-TAKEOFF)		
372		BATTERY CHARGER CONTROL UNIT (BCCU) FAULT – GROUND OPS		
381		WEAPONS EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (PRE-TAKEOFF)		

391		FLIGHT CONTROL SYSTEM (FCS) EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (PRE-TAKEOFF)		
401		BRAKES/LANDING GEAR EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (PRE-TAKEOFF)		
411		EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (PRE-TAKEOFF)		
412	Critical	ABANDONING THE AIRCRAFT (EMERGENCY GROUND EGRESS)	**R**	**R**
TAKEOFF			**R2**	**R2**
421		HYDRAULIC EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (TAKEOFF)		
431		ELECTRICAL EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (TAKEOFF)		
441		FUEL EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (TAKEOFF)		
451		ECS/OXYGEN EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (TAKEOFF)		
454	Critical	FOG, VAPOR OR SMOKE IN THE COCKPIT	**R**	**R**
461		ENGINE EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (TAKEOFF)		
462		ENGINE FAILURE ON TAKEOFF		
463		ABORT		
466		FIRE OR OVERHEAT WARNING LIGHT		
467		LOW THRUST OR PARTIAL POWER LOSS		

471		AVIONICS EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (TAKEOFF)		
474	Critical	LOW ALTITUDE AIRSTART	**R**	**R**
481		WEAPONS EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (TAKEOFF)		
491		FCS EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (TAKEOFF)		
501		BRAKES/LANDING GEAR EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (TAKEOFF)		
507		HUNG POGO		
511		EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (TAKEOFF)		
IN-FLIGHT			**R2**	**R2**
89		INGRESS (PRIMARY/BACKUP COMBAT/SRO NAV PROCEDURES)		**R**
94		EVASIVE MANEUVERS/THREAT REACTIONS		**R**
96		EA/EP/AAMD		**R**
521		HYDRAULIC/AIRFRAME MOUNTED ACCESSORY DRIVER (AMAD) EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (IN-FLIGHT)		
523		HYDRAULIC SYSTEM FAILURE		
525		AMAD/PTO SHAFT FAILURE		
526		AMAD OIL PRESSURE LOW		
527		AMAD OIL TEMP HIGH		
528		PARTIAL HYDRAULIC PRESSURE LOSS		

531		ELECTRICAL EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (IN-FLIGHT)		
532		COMPLETE ELECTRICAL FAILURE		
541		FUEL EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (IN-FLIGHT)		
544		FUEL CROSS TRANSFER PUMP FAILURE		
545		FUEL BOOST PUMP FAILURE		
551		ECS/OXYGEN EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (IN-FLIGHT)		
552		COCKPIT TEMPERATURE CONTROL FAILURE		
553		COCKPIT SMOKE		
557		PRESSURIZATION SYSTEM EMERGENCY OPERATION		
559	Critical	OXYGEN SYSTEM MALFUNCTION	**R**	**R**
561		ENGINE EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (IN-FLIGHT)		
564		FLAMEOUT PROCEDURES (CONFIGURATION THROUGH ROLLOUT)		
569		OIL SYSTEM MALFUNCTIONS		
571		AVIONICS EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (IN-FLIGHT)		
581		WEAPONS EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (IN-FLIGHT)		

591		FCS EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (IN-FLIGHT)		
592		CONTROLLABILITY CHECK		
601		BRAKES/LANDING GEAR EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (IN-FLIGHT)		
611		EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (IN-FLIGHT)		
613		SPIN/OUT OF CONTROL		
614		UNUSUAL ATTITUDE RECOVERIES	**R**	**R**
615	1	11-217 PROCEDURES/HMD-OUT/USE OF STANDBY INSTRUMENT APPROACH	**R**	
616		ALTERNATE/DIVERT AIRFIELDS	**R**	**R**
617	Critical	EJECTION	**R**	**R**
618		BEFORE EJECTION/BAILOUT		
620		DITCHING		
626	Critical	HIGH MACH RECOVERY	**R**	**R**
627	Critical	PITCH TRIM EMERGENCY	**R**	**R**
628		EMERGENCY DESCENT		
629		UNCOMMANDED SCRAMBLE HANDLE INITIATION		
630		Equipment Bay (Q-BAY) ALTITUDE HIGH		
LANDING			**R2**	**R2**
631		HYDRAULIC EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (LANDING)		

641		ELECTRICAL EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (LANDING)		
651		FUEL EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (LANDING)		
661		ECS/OXYGEN EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (LANDING)		
671		ENGINE EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (LANDING)		
678		FLAMEOUT LANDING/PRECAUTIONARY PATTERN – FLAPS DOWN		
679		FLAMEOUT LANDING – FLAPS UP		
681		AVIONICS EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (LANDING)		
691		WEAPONS EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (LANDING)		
701		FCS EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (LANDING)		
706		LANDING WITH LESS THAN 20 DEGREES FLAPS		
711		BRAKES/LANDING GEAR EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (LANDING)		
714		LANDING WITH LANDING GEAR UNSAFE		
721		EMERGENCY PROCEDURES/AIRCRAFT MALFUNCTIONS (LANDING)		
723		LANDING ON UNPREPARED SURFACE		

724		LANDING WITH X-WIND IN EXCESS OF MAX RECOMMENDED VALUE		

Notes:

1. Required if also an INSTM evaluation (i.e. INSTM/QUAL).

Chapter 3

EVALUATION CRITERIA

3.1. General Grading Standards.

3.1.1. FEs assign appropriate area grades by comparing examinee performance against standards as described in this chapter. The overall flight evaluation grade should be derived from individual area grades based on a composite for the observed events and tasks. The grading criteria in this chapter are divided into three sections: General, Instrument, and Tactical Employment.

3.1.2. If the examinee receives an unqualified area grade in any of the areas identified as “critical” by this volume, the overall qualification level must be a "Q3."

3.1.3. If an FE assigns a qualification level of unqualified (Q3), or if the FE assigns a qualification level of qualified (Q2) but assigns additional training:

3.1.3.1. FEs recommend whether or not such an examinee is allowed to fly before the additional training or re-evaluation is successfully completed.

3.1.3.2. Squadron commanders determine whether or not such an examinee is allowed to fly before the additional training or re-evaluation is successfully completed.

Table 3.1. General Aircraft Control Criteria.

Aircraft Control Criteria. The following general criteria apply at all times unless more specific criteria from **Table 3.2** apply.		
Q	Altitude	+/- 200 feet
	Airspeed	+/- 10 knots
	Course	+/- 5 degrees/3 NM (whichever is greater)
	TACAN Arc	≤ 2 NM
Q-	Altitude	+/- 300 feet
	Airspeed	+/- 15 knots
	Course	+/- 10 degrees/5 NM (whichever is greater)
	TACAN Arc	≤ 3 NM
U		Exceeded Q- limits

3.2. General Aircrew Evaluation Criteria.

3.2.1. Area 1--Mission Planning:

3.2.1.1. Publications:

3.2.1.2. **Q.** Assigned publications were current and usable for any/all flight tasks.

3.2.1.3. **Q-.** Assigned publications contained minor deviations, omissions, and/or errors, but contained everything necessary to effectively accomplish the mission and did not compromise safety of flight.

3.2.1.4. **U.** Assigned publications contained deviations, omissions, and/or errors of sufficient magnitude to compromise safety of flight.

3.2.1.5. Mission Preparation:

3.2.1.6. **Q.** Clearly defined the mission overview and mission goals. Developed a sound plan to accomplish the mission. Provided specific information on what needed to be done. Solicited feedback from other crewmembers to ensure understanding of mission requirements. Thoroughly critiqued plans to identify potential problem areas and ensured all flight members understood possible contingencies. Checked all factors applicable to flight in accordance with applicable directives. When required, extracted necessary information from air tasking order. Aware of alternatives available if flight cannot be completed as planned. Read and initialed for all items in the flight crew information file and read files. Prepared at briefing time.

3.2.1.7. **Q-.** Did not adequately define the mission overview and mission goals. Did not adequately address potential problem areas. Did not adequately solicit feedback or critique the plans to ensure understanding of possible contingencies. Minor error(s) or omission(s) detracted from mission effectiveness, but did not affect mission accomplishment. Demonstrated limited knowledge of performance capabilities or approved operating procedures/rules in some areas.

3.2.1.8. **U.** Did not define the mission overview and goals. Lack of specific information on required items. Did not solicit feedback from other crewmembers to ensure understanding. Did not critique plans to identify potential problem areas. Major error(s) or omission(s) would have prevented a safe or effective mission. Displayed unsatisfactory knowledge of operating data or procedures. Did not review or initial Go/No Go items. Not prepared at briefing time.

3.2.1.9. Mobile:

3.2.1.10. **Q.** Coordinated with the pilot to ensure development of a sound plan to accomplish the mission. Backed up the pilot to ensure all factors applicable to the flight were checked. Aware of alternatives available if the flight could not be completed as planned.

3.2.1.11. **Q** -. Same as above, except minor deviations, omissions, or errors which did not detract from mission effectiveness.

3.2.1.12. **U.** Major deviations, omissions, or errors which would preclude safe and effective mission accomplishment.

3.2.2. Area 2--Briefing (if applicable):

3.2.2.1. Organization:

3.2.2.2. **Q.** Well organized, included all applicable information and presented in a logical sequence. Briefed flight member responsibilities, deconfliction contracts, combat mission priorities and sensor management. Concluded briefing in time to allow for element briefing (if applicable) and preflight of personal equipment, aircraft and ordnance.

3.2.2.3. **Q-.** Events out of sequence, hard to follow, some redundancy. Not fully prepared for briefing.

3.2.2.4. **U.** Confusing presentation, poorly organized and not presented in a logical sequence. Did not allow time for element briefing (if applicable) and preflight of personal equipment, aircraft and ordnance. Failed to brief required areas.

3.2.2.5. Presentation:

3.2.2.6. **Q.** Presented in a professional manner. Effectively used available training aids. Pilot and mobile clearly understood mission sequence and requirements.

3.2.2.7. **Q-.** Did not effectively use available training aids. Dwelled on non-essential mission items.

3.2.2.8. **U.** Not presented in a professional manner. Did not use available training aids. Created doubts or confusion which would preclude safe and effective mission accomplishment.

3.2.2.9. Mission Objectives:

3.2.2.10. **Q.** Established clear objectives for the mission. Presented all training events and effectively addressed how each would be accomplished.

3.2.2.11. **Q-.** Objectives undefined or poorly quantified. Omitted minor training events and/or did not effectively address how each objective would be accomplished.

3.2.2.12. **U.** Did not establish clear objectives for the mission. Omitted major training events.

3.2.2.13. Mobile:

3.2.2.14. **Q.** Coordinated with the pilot for emergency procedures scenarios. Understood role and pilot expectations in the event of an emergency during takeoff. Understood role and pilot's briefed plan for in-flight emergencies.

3.2.2.15. **Q-.** Same as above, except minor deviations, omissions, or errors which did not detract from mission effectiveness.

3.2.2.16. **U.** Demonstrated lack of understanding of pilot's expectations. No awareness of emergency procedures plans. Failed to develop a shared mental picture with the pilot.

3.2.3. Area 3--Ground Operations:

3.2.3.1. Before Takeoff:

3.2.3.2. **Q.** Established and adhered to a timeline (integration, engine start, taxi, takeoff) while ensuring a thorough check of personal equipment and preflight. Performed all checks and procedures prior to takeoff IAW checklists and governing directives.

3.2.3.3. **Q-.** Same as above, except minor deviations, omissions, or errors which did not detract from mission effectiveness or jeopardize safety.

3.2.3.4. **U.** Omitted major items of appropriate checklists or procedures. Committed major deviations in procedure which precluded safe and effective mission accomplishment. Failed to accurately determine readiness of aircraft for flight. Errors directly contributed to a late takeoff, or degraded the mission so as to make it non-effective.

3.2.3.5. After Landing:

3.2.3.6. **Q.** Performed all checks and procedures after landing IAW checklists and governing directives. Completed all required post-flight documentation accurately.

3.2.3.7. **Q-.** Same as above, except minor deviations, omissions, or errors which did not detract from mission effectiveness or jeopardize safety. Required post-flight documentation completed with minor deviations, omissions, or errors.

3.2.3.8. **U.** Omitted major items of appropriate checklists or procedures. Committed major deviations in procedure which precluded safe and effective mission accomplishment. Data in post-flight documentation omitted, or recorded inaccurately or incorrectly.

3.2.4. Area 4--Takeoff:

3.2.4.1. Pilot:

3.2.4.2. **Q.** Aircraft control was smooth and positive throughout takeoff. Performed takeoff IAW flight manual procedures.

3.2.4.3. **Q-.** Some under or over control at liftoff. Minor deviations from flight manual procedure or technique which did not jeopardize safety.

3.2.4.4. **U.** Over controlled aircraft resulting in excessive deviations from intended flight path. Liftoff was potentially dangerous. Failed to establish proper climb attitude. Exceeded aircraft or systems limitations.

3.2.4.5. Mobile:

3.2.4.6. **Q.** Performed thorough drive around inspection. Ensured adequate O2 time (if applicable) and ensured takeoff clearance was received. Positioned mobile to assist the pilot as necessary. Calls were timely and accurate.

3.2.4.7. **Q-.** Performed thorough drive around inspection, but Minor errors observed. Ensured adequate O2 time (if applicable) and ensured takeoff clearance was received. Positioned mobile to assist the pilot as necessary. Minor errors in calls noted and/or not timely and/or slightly inaccurate.

3.2.4.8. **U.** Major errors noted during drive around inspection, and/or issues ensuring adequate O2 time (if applicable) and/or issues ensuring proper takeoff clearance was received. Major errors in positioning mobile to assist the pilot as necessary, and /or Calls were not timely and/or inaccurate.

3.2.5. Area 6--Departure:

3.2.5.1. Instrument Departure:

3.2.5.2. **Q.** Performed departure as published or directed, and complied with all restrictions.

3.2.5.3. **Q-.** Minor deviations in airspeed and/or navigation during completion of departure.

3.2.5.4. **U.** Failed to comply with departure procedure or restrictions.

3.2.5.5. Tactical Departure:

3.2.5.6. **Q.** Performed departure as directed and complied with all restrictions.

3.2.5.7. **Q-.** Minor deviations in airspeed and/or navigation during completion of departure.

3.2.5.8. **U.** Failed to comply with departure procedure or restrictions. Over controlled the aircraft while executing maneuver.

3.2.6. Area 7--Level Off:

3.2.6.1. **Q.** Leveled off smoothly and promptly established proper airspeed.

3.2.6.2. **Q-.** Level off was erratic. Slow to establish proper airspeed.

3.2.6.3. **U.** Exceeded Q- criteria. Failed to establish proper airspeed. Failed to input proper altimeter setting, if required.

3.2.7. Area 8--Cruise/Navigation:

3.2.7.1. **Q.** Demonstrated satisfactory capability to navigate using all available means. Properly recorded all flight data on the green card, the pilots hard backed flight form. Ensured NAVAIDs were properly tuned, identified and monitored. Complied with clearance instructions. Aware of position at all times, and remained within the confines of assigned airspace. Any fix-to-fix navigation was accurate to within ±2 NM.

3.2.7.2. **Q-.** Minor errors in procedures or use of navigation equipment. Minor errors or omissions on green card. Minor deviations in tuning, identifying, and monitoring NAVAIDs. Slow to comply with clearance instructions. Displayed difficulty in establishing exact position and course. Any fix-to-fix navigation was accurate to within ±4 NM.

3.2.7.3. **U.** Exceeded Q- criteria. Major errors in use of navigation equipment, or could not establish position. Major errors or omissions on green card. Did not remain within the confines of assigned airspace.

3.2.8. Area 10--In-Flight Checks:

3.2.8.1. **Q.** Performed all in-flight checks as required.

3.2.8.2. **Q-.** Minor deviations, omissions, or errors which did not preclude safe and effective mission accomplishment.

3.2.8.3. **U.** Major deviations, omissions, or errors which detracted from mission accomplishment. Did not perform in-flight checks. Did not adequately monitor system

performance to the degree that an emergency condition would have developed if allowed to continue uncorrected.

3.2.9. Area 12--Communications, Navigation, and IFF (CNI) Usage:

3.2.9.1. **Q.** Complete knowledge of, and compliance with, applicable Comm/IFF/SIF procedures. Radio transmissions were concise and used proper terminology. Complied with and acknowledged all required instructions.

3.2.9.2. **Q-.** Occasional deviations, omissions, or errors in procedures which required retransmission of information or resetting of codes. Slow in initiating required actions. Communications contained extraneous material, were not in proper sequence, or used non-standard terminology.

3.2.9.3. **U.** Exceeded Q- criteria. Incorrect application of procedures, or poor performance, compromised mission effectiveness or jeopardized safety.

3.2.10. Area 14--Airwork (Flight Characteristics Demo)

3.2.10.1. **Q.** Aircraft control was smooth and positive. Maneuvering was performed IAW procedures and techniques outlined in the flight manual, operational procedures, and local directives.

3.2.10.2. **Q-.** Aircraft control was adequate, but not always smooth or positive. Minor deviations, omissions, or errors in procedures.

3.2.10.3. **U.** Aircraft control was erratic and failed to demonstrate the desired or determined effect. Temporary loss of aircraft control during maneuvering.

3.2.11. Area 16--Equipment Operations:

3.2.11.1. Pilot:

3.2.11.2. **Q.** Operated equipment according to procedures IAW flight manuals, checklists, and governing directives. Accurately analyzed equipment malfunctions and efficiently applied appropriate corrective action with consistent results. No damage or significant system degradation resulted from operator inputs or lack of knowledge.

3.2.11.3. **Q-.** Operated equipment with deviations, omissions, or errors in procedures defined in the flight manual, checklists, and governing directives. Analysis of equipment malfunctions was faulty and inaccurate. Corrective actions were incorrectly or inefficiently applied. Actions did not damage equipment or jeopardize safety. The level of performance or knowledge was the minimum acceptable.

3.2.11.4. **U.** Exceed Q- criteria or damaged equipment. Could not achieve acceptable results due to incorrect application of procedure, inefficient analysis, and/or lack of knowledge.

3.2.11.5. Mobile:

3.2.11.6. **Q.** Operated equipment according to procedures IAW flight manuals, checklists and governing directives. No damage, system degradation, or compromise of mission effectiveness resulted from operator inputs.

3.2.11.7. **Q-.** Operated equipment with minor deviations, omissions, or errors in procedures defined in the flight manual, checklists, and governing directives. Slow in initiating required actions. Communications contained extraneous material, were not in proper sequence, or used non-standard terminology. Actions did not damage equipment or jeopardize safety.

3.2.11.8. **U.** Exceeded Q- criteria or damaged equipment. Incorrect application of procedures, or poor performance, compromised mission effectiveness or jeopardized safety.

3.2.12. Area 18--Tactical Arrival:

3.2.12.1. **Q.** Performed the tactical arrival IAW governing directives and local procedures, and within aircraft limitations outlined in the flight manual. Complied with all restrictions. Made smooth and timely corrections.

3.2.12.2. **Q-.** Performed the tactical arrival with minor deviations, omissions, or errors. Complied with all restrictions. Slow to make corrections.

3.2.12.3. **U.** Performed the tactical arrival with major deviations. Corrections were erratic, excessive, or unsafe.

3.2.13. Area 19--Go-Around:

3.2.13.1. **Q.** Initiated and performed go-around promptly IAW procedures outlined in the flight manual, operational procedures, and local directives.

3.2.13.2. **Q-.** Go-around was performed with minor deviations, omissions, or errors in procedures outlined in the flight manual, operational procedures, and local directives. Slow to initiate go-around when appropriate or directed.

3.2.13.3. **U.** Exceeded Q- criteria. Did not initiate go-around when appropriate or directed. Aircraft control was erratic or unsafe, and/or exhibited large deviations from runway alignment.

3.2.14. Area 21—Emergency Traffic Patterns.

3.2.14.1. General. Ensure all sub-areas are evaluated, to include SFO patterns with and without flaps:

3.2.14.2. **Q.** Configured at the appropriate position and altitude. Executed the maneuver based on procedures outlined in the flight manual. Aircraft control was smooth and positive. Pattern was flown at the appropriate airspeed throughout, and ultimately resulted in the aircraft being in position for a safe landing. Properly assessed impacts of local conditions and tailored planned profile as necessary.

3.2.14.3. **Q-.** Configured at a position and altitude which allowed for a safe approach. Aircraft was under or over controlled. Pattern resulted in the aircraft ultimately being in position for a safe landing, but:

3.2.14.3.1. **(1)** Was executed with minor deviations, omissions, or errors in flight manual procedures, airspeeds, and/or altitudes.

3.2.14.3.2. **(2)** Required unnecessary maneuvering due to minor errors in planning or judgment.

3.2.14.4. **U.** Major deviations from procedures outlined in the flight manual. Aircraft control was erratic or unsafe, with major deviations from airspeed and/or altitude. Required excessive maneuvering due to inadequate planning or poor judgment. Aircraft was placed in a position from which a safe landing could not be made.

3.2.14.5. SFO or Precautionary Pattern. SFOs and precautionary patterns are graded from high key to 10 feet. High Key can occur at any place/altitude depending on aircraft energy state and environmental factors, but is typically a point over the intended landing zone. In order to evaluate the examinee's energy management on SFOs, do not plan on using spoilers until arriving at 10 feet (N/A for precautionary patterns). The examinee may use spoilers if necessary to ensure arrival at 10 feet within parameters, but the FE may request to see the maneuver repeated without the use of spoilers.

3.2.14.6. **Q.** Maintained proper airspeed within +10/-2 knots. Arrived at 10 feet within the first third of the runway. Aircraft control was smooth and positive, with aircraft placed in a safe position to land upon reaching 10 feet.

3.2.14.7. **Q-.** Maintained proper airspeed within +15/-5 knots. Arrived at 10 feet either prior to the runway threshold, or past the first third but before the runway midpoint.. Aircraft was under or over controlled. Unable to successfully perform the maneuver to Q criteria without the use of spoilers.

3.2.14.8. **U.** Exceeded Q- criteria. Required excessive maneuvering due to misjudgment of winds or energy state.

3.2.14.9. No-Flap Pattern. In order to evaluate the examinee's energy management, do not plan on using spoilers to execute a no-flap pattern. If the examinee uses spoilers to correct for a poorly planned or poorly flown no-flap pattern, the FE may request to see the maneuver repeated without the use of spoilers. In less-than-optimal environmental conditions, spoilers may be required to safely and correctly fly a no-flap pattern.

3.2.14.10. **Q.** Crossed the threshold with airspeed +5/-0 knots.

3.2.14.11. **Q-.** Crossed the threshold with airspeed +10/-1 knots.

3.2.14.12. **U.** Exceeded Q- criteria.

3.2.15. Area 23--Normal VFR Pattern/Approach. Normal VFR patterns/approaches begin when the aircraft arrives on initial, initiates a closed pattern, or arrives on final for a visual straight-in approach. They are graded up to the point where power would normally be reduced for landing or a go-around is initiated:

3.2.15.1. **Q.** Performed patterns/approaches IAW procedures and techniques outlined in the flight manual, operational procedures, and local directives. Aircraft control was smooth and positive with accurate runway alignment. Maintained proper airspeed between +10/-3 knots.

3.2.15.2. **Q-.** Performed patterns/approaches with minor deviations, omissions, or errors in procedures and techniques outlined in the flight manual, operational procedures, and local directives. Aircraft control was safe, but not always smooth and/or with variations in runway alignment. Maintained proper airspeed within +15/-5 knots.

3.2.15.3. **U.** Exceeded Q- criteria. Patterns/approaches were not performed IAW procedures outlined in the flight manual, operational procedures, and local directives. Aircraft control was erratic or unsafe. Used bank angles greater than 30º to fly the pattern, and/or exhibited large deviations from runway alignment.

3.2.16. Area 25--Landing. Applicable to all landings, including minimum-run landings.

3.2.16.1. **Q.** Performed landings IAW procedures and techniques outlined in the flight manual, operational procedures, and local directives. Touchdown point was within the first third of the runway.

3.2.16.2. **Q-.** Performed landings with minor deviations, omissions, or errors in procedures and techniques outlined in the flight manual, operational procedures, and local directives. Touchdown attitude was slightly main gear first, and/or with small amounts of drift or crab which did not affect aircraft control. Skips or bounces did not exceed 2 feet. Touchdown point would have been beyond the first third of the runway if go-around was not initiated.

3.2.16.3. **U.** Exceeded Q- criteria. Landings were not performed IAW procedures outlined in the flight manual, operational procedures, and local directives. Aircraft landed main gear first, and/or involved a pilot-induced oscillation (PIO).

3.2.17. Area 29--Knowledge. Evaluate all applicable subareas.

3.2.17.1. Aircraft General:

3.2.17.2. **Q.** Thorough knowledge of aircraft systems, limitations, and performance characteristics.

3.2.17.3. **Q-.** Knowledge of aircraft systems, limitations, and performance characteristics is sufficient to safely accomplish the mission. Deficiencies noted in either depth of knowledge or comprehension.

3.2.17.4. **U.** Exceeded Q- criteria. Knowledge level is unsatisfactory.

3.2.17.5. Emergency Procedures:

3.2.17.6. **Q.** Correct, immediate response to Boldface and non-Boldface emergency situations. Effectively used checklist or flight manual.

3.2.17.7. **Q-.** Response to Boldface emergencies was 100% correct. Response to certain areas of non-Boldface emergencies, or follow-on steps of Boldface emergencies, was slow or confused. Demonstrated appropriate use of the checklist or flight manual, but was slow to locate required sections or data.

3.2.17.8. **U.** Incorrect response to a Boldface emergency. Unable to analyze malfunctions or take corrective action. Did not reference checklist or flight manual when appropriate, or lacked familiarity with the manual's arrangement or content.

3.2.17.9. Flight Rules/Procedures:

3.2.17.10. **Q.** Thorough knowledge of flight rules and local area procedures.

3.2.17.11. **Q-.** Deficiencies in depth of knowledge. Minor deviations or errors in application of rules or procedures.

3.2.17.12. **U.** Exceeded Q- criteria. Knowledge level is unsatisfactory.

3.2.17.13. Mobile:

3.2.17.14. **Q.** Thorough knowledge of procedures and systems for both mobile and aircraft.

3.2.17.15. **Q-.** Knowledge level is sufficient to safely accomplish the mission. Deficiencies noted in either depth of knowledge or comprehension.

3.2.17.16. **U.** Exceeded Q- criteria. Knowledge level is unsatisfactory.

3.2.18. Area 30--Airmanship/Situational Awareness (Critical):

3.2.18.1. **Q.** Accomplished the assigned mission in a timely, efficient manner. Conducted the flight with a sense of understanding and comprehension.

3.2.18.2. **U.** Decisions, or lack thereof, resulted in failure to accomplish the assigned mission. Demonstrated poor judgment, compromised mission effectiveness, and/or jeopardized safety.

3.2.19. Area 31--Safety (Critical):

3.2.19.1. **Q.** Aware of, and complied with, all safety factors required for operating the aircraft or mobile.

3.2.19.2. **U.** Was not aware of, or did not comply with, all safety factors required for operating the aircraft or mobile. Operated the aircraft or mobile in a dangerous manner. Failed to correctly accomplish a Boldface procedure.

3.2.20. Area 32--Flight Discipline (Critical):

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

3.2.20.2. **U.** Failed to exhibit strict flight or crew discipline. Violated or ignored rules set forth in governing directives.

3.2.21. Area 33--Instructor Performance (if applicable).

3.2.21.1. Briefing/Debriefing:

3.2.21.2. **Q.** Briefing was instructional and comprehensive, clearly defined objectives, and encompassed all mission events. Effectively used available training aids. Debriefing was instructional and comprehensive, with analysis of all events and maneuvers. Exercised sound operational risk management.

3.2.21.3. **Q-.** Minor deviations, omissions, or errors in briefing, debriefing, and/or mission critique. Analysis of events or maneuvers was occasionally unclear or confusing.

3.2.21.4. **U.** Major deviations, omissions, or errors in briefing or debriefing. Analysis of events and maneuvers was incomplete, inaccurate, or confusing.

3.2.21.5. Demonstration of Maneuvers (Flight or Mobile)

3.2.21.6. **Q.** Performed required maneuvers within prescribed parameters. Provided concise, meaningful commentary while executing the maneuver. Demonstrated sound instructor proficiency.

3.2.21.7. **Q-.** Performed required maneuvers, with minor deviations, omissions, or errors in parameters. Commentary was occasionally unclear or confusing.

3.2.21.8. **U.** Unable to perform the required maneuvers. Major deviations, omissions, or errors in procedure. Did not provide commentary while executing the maneuver.

3.2.21.9. Instructor Knowledge:

3.2.21.10. **Q.** Demonstrated in-depth knowledge of procedures, aircraft systems and performance characteristics, mission, and tactics, beyond the knowledge level expected of non-instructors.

3.2.21.11. **Q-.** Deficiencies noted in depth of knowledge, comprehension of procedures, aircraft systems and performance characteristics, mission, and/or tactics.

3.2.21.12. **U.** Unfamiliar with procedures, aircraft systems and performance characteristics, mission and/or tactics. Lack of knowledge seriously detracted from instructor effectiveness.

3.2.21.13. Preparation of Training and Evaluation Forms:

3.2.21.14. **Q.** Accurately completed appropriate training records or evaluation forms. Adequately assessed and documented student performance. Comments were clear, concise, and pertinent.

3.2.21.15. **Q-.** Minor deviations, omissions, or errors in completed training records or evaluation forms. Comments were incomplete or confusing.

3.2.21.16. **U.** Did not complete appropriate training records or evaluation forms. Comments were invalid, unclear, or did not accurately document student performance.

3.2.21.17. Ability to Instruct:

3.2.21.18. **Q.** Demonstrated sound instructor ability. Clearly defined all mission requirements and any required additional training or corrective action. Instruction and evaluation were accurate, effective, and timely. Was completely aware of aircraft and mission situation at all times.

3.2.21.19. **Q-.** Minor deviations, omissions, or errors in communication or analysis degraded effectiveness of instruction.

3.2.21.20. **U.** Demonstrated inadequate or unsatisfactory ability to instruct. Unable to perform, instruct techniques, procedures, systems use, or tactics. Unable to assess student performance or provide pertinent feedback. Did not maintain awareness of aircraft and mission situation at all times.

3.2.22. Area 37--Cockpit/Crew Resource Management. Applicable between pilots in the TU-2S, and between the pilot and mobile. Reference AFI 11-290 and AF Form 4031 for CRM:

3.2.22.1. Pilot:

3.2.22.2. **Q.** Effectively coordinated with other pilot or mobile without misunderstanding. Effective use of CRM.

3.2.22.3. **Q-.** Coordinated with other pilot or mobile with minor exceptions. Intra-crew communications were not always clear or concise. CRM was the minimum acceptable.

3.2.22.4. **U.** Breakdown in coordination with other pilot or mobile, which compromised mission effectiveness or jeopardized safety. CRM was lacking to the extent mission accomplishment was significantly degraded.

3.2.22.5. Mobile:

3.2.22.6. **Q.** Effectively coordinated with the pilot without misunderstanding. Effective use of CRM.

3.2.22.7. **Q-.** Coordinated with the pilot with minor exceptions. Communication with the pilot was not always clear or concise. CRM was the minimum acceptable.

3.2.22.8. **U.** Breakdown in coordination with the pilot, which compromised mission effectiveness or jeopardized safety. CRM was lacking to the extent mission accomplishment was significantly degraded.

3.2.23. Area 173--High Speed Taxi Demonstration:

3.2.23.1. **Q.** Performed demonstration IAW procedures and techniques outlined in the flight manual, operational procedures, local directives, and syllabus guidance.

3.2.23.2. **Q-.** Performed demonstration with minor deviations, omissions, or errors in procedures and techniques outlined in the flight manual, operational procedures, local directives, and syllabus guidance.

3.2.23.3. **U.** Exceeded Q- criteria. Major deviations which rendered the demonstration ineffective or unsafe.

3.2.24. Area 174--Approach to Stall Recovery/Stall Recovery:

3.2.24.1. Approach to Stall Recovery:

3.2.24.2. **Q.** Accurate recognition of approach to stall indications. Smooth, positive recovery to level flight with minimal altitude loss. Used correct procedures.

3.2.24.3. **Q-.** Slow to recognize and recover from approach to stall indications. Correct recovery procedures used.

3.2.24.4. **U.** Unable to recognize approach to stall indications. Incorrect recovery procedures used or allowed aircraft to enter a fully stalled condition. Excessive altitude lost during recovery.

3.2.24.5. Stall Recovery:

3.2.24.6. **Q.** Accurate recognition of stall indications. Positive recovery to level flight with or without the use of power. Appropriate use of rudder and aileron during high AOA flight regime.

3.2.24.7. **Q-.** Slow to recognize stall indications. Safe recovery to level flight with minor errors in recovery procedures.

3.2.24.8. **U.** Unable to recognize stall indications and/or incorrect recovery procedures used.

3.3. Aircrew Evaluation Criteria—Instruments.

3.3.1. Area 61--Holding:

3.3.1.1. **Q.** Performed entry and holding procedure IAW governing directives. Pattern limit exceeded by not more than ±2 NM based on TACAN data.

3.3.1.2. **Q-.** Pattern limit exceed by not more than ±3 NM based on TACAN data.

3.3.1.3. **U.** Exceeded Q- criteria or holding pattern limits.

3.3.2. Area 62--Instrument Penetration (Initial Approach Fix to Final Approach Fix/Descent Point)/Enroute Descent (Radar Vectors To Final Approach):

3.3.2.1. **Q.** Performed the penetration and approach, or enroute descent, as published or directed, and IAW procedures outlined in the flight manual. Complied with all restrictions. Made smooth and timely corrections.

3.3.2.2. **Q-.** Performed the penetration and approach, or enroute descent, with minor deviations, omissions, or errors. Complied with all restrictions. Slow to make corrections.

3.3.2.3. **U.** Performed the penetration and approach, or enroute descent, with major deviations. Corrections were erratic, excessive, or unsafe.

3.3.3. Area 64—Non-Precision Approach:

3.3.3.1. **Q.** Adhered to published procedure, or ATC instructions or restrictions. Smooth and timely response to approach controller's instructions. Used appropriate descent rate to arrive at MDA at or before the VDP and MAP. Aircraft was placed in a position from which a safe landing could be made. Additional criteria:

3.3.3.2. Airspeed: +10/-5 knots

3.3.3.3. Altitude at MDA: +100/-25 feet

3.3.3.4. Course or heading:

3.3.3.4.1. - Headings (ASR): ±5º

3.3.3.4.2. - Course: ±5º at MAP

3.3.3.4.3. - Localizer: less than one dot deflection

3.3.3.5. **Q-.** Performed published procedure with minor deviations, omissions, or errors. Slow to comply with ATC instructions or restrictions. Arrived at MDA at, or before, the MAP, but past the VDP. Aircraft was placed in a position from which a safe landing could be made. Additional criteria:

3.3.3.6. Airspeed: +15/-10 knots

3.3.3.7. Altitude at MDA: +150/-50 feet

3.3.3.8. Course or heading:

3.3.3.8.1. - Headings (ASR): ±10º

3.3.3.8.2. - Course: ±10º at MAP

3.3.3.8.3. - Localizer: remained within two dot deflection

3.3.3.9. **U.** Exceeded Q- criteria. Did not comply with published procedure, or ATC instructions or restrictions. Maintained steady-state flight below the MDA. Aircraft was not placed in a position from which a safe landing was possible.

3.3.4. Area 65 and 66--Precision Approach (Precision Approach Radar [PAR] or Instrument Landing System [ILS]):

3.3.4.1. **Q.** Adhered to published procedure, or ATC instructions or restrictions. Smooth and timely response to approach controller's instructions. Maintained glide path with only minor deviations and complied with DH. Aircraft was placed in a position from which a safe landing could be made. Additional criteria:

3.3.4.2. Airspeed: +10/-5 knots

3.3.4.3. Headings (PAR): ±5º

3.3.4.4. ILS: Azimuth and glide slope within one dot

3.3.4.5. **Q-.** Performed published procedure with minor deviations, omissions, or errors. Slow to comply with approach controller's instructions. Improper glide path control, or initiated appropriate action within ±50 feet of DH. Aircraft was placed in a position from which a safe landing could be made. Additional criteria:

3.3.4.6. Airspeed: +15/-10 knots

3.3.4.7. Headings (PAR): ±10º

3.3.4.8. ILS:

3.3.4.8.1. - Azimuth within two dot deflection

3.3.4.8.2. - Glide slope within one dot low to two dots high

3.3.4.9. **U.** Exceeded Q- criteria. Did not comply with published procedure, or ATC instructions or restrictions. Course corrections or glide path control was erratic. Did not comply with DH. Aircraft was not placed in a position from which a safe landing was possible.

3.3.5. Area 67--Missed Approach/Climb Out:

3.3.5.1. **Q.** Executed missed approach or climb-out as published or directed. Completed maneuver IAW procedures outlined in the flight manual.

3.3.5.2. **Q-.** Executed missed approach or climb-out with minor deviations, omissions, or errors from procedures outlined in the flight manual. Slow to comply with published procedures or controller's instructions.

3.3.5.3. **U.** Executed missed approach or climb-out with major deviations. Did not comply with published procedures or controller's instructions.

3.3.6. Area 68--Circling/Sidestep Approach:

3.3.6.1. **Q.** Performed circling or side-step approach IAW procedures outlined in the flight manual and governing directives. Aircraft control was smooth and positive with accurate runway alignment. Airspeed was maintained within +10/-5 knots.

3.3.6.2. **Q-.** Performed circling or side-step approach with minor deviations, omissions, or errors from procedures outlined in the flight manual and governing directives. Aircraft control was safe, but not always smooth and/or with variations in runway alignment. Go-around was not required. Airspeed was maintained within +20/-5 knots.

3.3.6.3. **U.** Exceeded Q- criteria. Circling or side-step approach was not performed IAW procedures outlined in the flight manual or governing directives. Aircraft control was erratic or unsafe. Large deviations in runway alignment, or excessive corrections, required a go-around.

3.3.7. Area 69--Instrument Cross-Check:

3.3.7.1. **Q.** Effective instrument cross-check. Aircraft control was smooth and positive during actual or simulated instrument conditions. Met Q criteria as specified in **Table 1.1**, and for all instrument-related events evaluated.

3.3.7.2. **Q-.** Instrument cross-check was slow. Aircraft control was not always smooth and positive, with abrupt corrections to compensate for slow recognition of deviations or errors. Met Q- criteria as specified in **Table 3.1**, and/or for any instrument-related events evaluated.

3.3.7.3. **U.** Exceeded Q- criteria. Instrument cross-check was unsatisfactory or unsafe. Aircraft control was erratic and/or exhibited excessive corrections.

3.4. Aircrew Evaluation Criteria—Mission.

3.4.1. Area 85--Radio Use/Tactical Communications (Primary/Backup Combat/Sensitive Reconnaissance Operations [SRO] Communications Procedures):

3.4.1.1. **Q.** Thorough knowledge of communication procedures applicable to both combat and SRO environments. Thorough knowledge of aircraft communication system capabilities and limitations.

3.4.1.2. **Q-.** Knowledge of communication procedures and aircraft communication system sufficient to safely perform the mission. Deficiencies noted in depth of knowledge, comprehension, or application.

3.4.1.3. **U.** Unsatisfactory knowledge level, with potential to seriously degrade mission accomplishment.

3.4.2. Area 88--Tactical Navigation (Dead Reckoning [DR]/Pilotage Navigation):

3.4.2.1. **Q.** Performed IAW procedures and techniques outlined in the flight manual, operational procedures, and local directives. Circular error at the conclusion of DR/pilotage navigation leg was within 14 NM or 2 minutes, whichever was greater.

3.4.2.2. **Q-.** Performed with minor deviations, omissions, or errors in procedures and techniques outlined in the flight manual, operational procedures, and local directives. Circular error at the conclusion of DR/pilotage navigation leg was within 20 NM or 3 minutes, which was greater.

3.4.2.3. **U.** Exceeded Q- criteria.

3.4.3. Area 89—Ingress (Primary/Backup Combat/SRO Navigation Procedures):

3.4.3.1. **Q.** Thorough knowledge of navigation procedures applicable to both combat and SRO environments. Thorough knowledge of aircraft navigation system capabilities and limitations, inclusive of operations in a degraded environment (e.g. INS only or with degraded GPS).

3.4.3.2. **Q-.** Knowledge of navigation procedures and aircraft navigation system sufficient to safely perform the mission. Deficiencies noted in depth of knowledge, comprehension, or application.

3.4.3.3. **U.** Unsatisfactory knowledge level, with potential to compromise safety of flight, violate airspace, or seriously degrade mission accomplishment.

3.4.4. Area 94--Evasive Action/Threat Reactions/Electronic Warfare System (EWS) Operation. Area includes U-2 specific threat awareness and reactions to SAM, AI, MANPAD, cyber, and threats to communications and navigation. Examinee should demonstrate a working knowledge of AFTTP 3-1.U-2, inclusive of current threats in each category, defensive maneuvers or reactions, EWS operations, and degraded system capabilities and limitations:

3.4.4.1. **Q.** Threat reactions and countermeasures were appropriate, timely, and correct. Operated equipment IAW procedures and techniques outlined in the flight manual, checklists, operational procedures, and governing directives. Accurately and efficiently analyzed equipment malfunctions or degradation.

3.4.4.2. **Q-.** Threat reactions and countermeasures were slow or inconsistent. Operated equipment with deviations, omissions, or errors from procedures and techniques outlined in the flight manual, checklists, operational procedures, and governing directives. Equipment malfunctions were ignored, analyzed in error, or resulted from faulty operator techniques or erroneous data input. The level of performance or knowledge was the minimum acceptable.

3.4.4.3. **U.** Exceed Q- criteria. Threat reactions and/or countermeasures were omitted or incorrect. Examinee inputs or lack of knowledge resulted in system damage. Could not achieve acceptable results due to poor or incorrect application of procedures.

3.4.5. Area 96— EA/EP/AAMD

3.4.5.1. **Q.** Thorough knowledge of EWS capabilities, limitations, and degraded system operations. Effectively interpreted displayed threat warning information.

3.4.5.2. **Q-.** Knowledge level and ability to interpret displayed threat warning data is sufficient to safely accomplish the mission. Deficiencies noted in depth of knowledge, comprehension, or application.

3.4.5.3. **U.** Exceeded Q- criteria. Knowledge level is unsatisfactory. Unable to interpret displayed threat warning information.

3.4.6. Area 97--Payload Operation. Area includes operation of aircraft payloads (sensors and data links) as prescribed in the flight manuals, checklists, and governing directives. Also includes the examinee's systems knowledge regarding proper operating procedures, system capabilities and limitations, analysis of equipment malfunctions and application of appropriate corrective actions:

3.4.6.1. **Q.** Operated equipment IAW procedures and techniques outlined in the flight manual, checklists, operational procedures, and governing directives. Accurately and efficiently analyzed equipment malfunctions with consistent mission results. No damage or system degradation resulted from examinee inputs or lack of knowledge.

3.4.6.2. **Q-.** Operated equipment with minor deviations, omissions, or errors in procedures outlined in the flight manual, checklists, operational procedures, and governing directives. Equipment malfunctions were ignored, analyzed in error, or resulted from faulty operator techniques or erroneous data input. No damage or system degradation resulted from examinee inputs or lack of knowledge. The level of performance or knowledge was the minimum acceptable.

3.4.6.3. **U.** Exceeded Q- criteria. Examinee inputs or lack of knowledge resulted in system damage. Could not achieve acceptable results due to poor or incorrect application of procedures.

3.4.7. Area 295--INS Orbit Exercise. FEs may introduce additional injects (e.g. timing changes, threats, orbit changes) during the exercise, provided the changes are provided in a realistic manner and are coordinated (if necessary) with ATC:

3.4.7.1. **Q.** Orbit was performed IAW procedures and techniques outlined in the flight manual, operational procedures, and local directives. Timing events were met within 2 minutes of designated arrival time(s).

3.4.7.2. **Q-.** Orbit was performed with minor deviations, omissions, or errors in procedures outlined in the flight manual, operational procedures, and local directives. Timing events were met within 3 minutes of designated arrival time(s).

3.4.7.3. **U.** Exceeded Q- criteria.

3.4.8. Area 1036--Mobile Run-Ins. High angle run-ins are defined as those with an angular difference of greater than 60º off runway centerline. Long distance run-ins are defined as those where the distance from the starting point to runway entry is greater than 500 feet:

3.4.8.1. High Angle Run-Ins (Long and Short Distance):

3.4.8.2. **Q.** Consistently demonstrated the ability to place the mobile in a position to provide effective support to the pilot. Vehicle control was positive at all times, with the demonstrated ability to remain in position once joined with the aircraft.

3.4.8.3. **Q-.** Demonstrated minimum acceptable ability to place the mobile in a position to provide effective support to the pilot. Vehicle control was acceptable and safe.

3.4.8.4. **U.** Exceeded Q- criteria. Consistently failed to place the mobile in an acceptable position. Vehicle control was lacking or unsafe. Unable to perform mobile duties.

3.4.8.5. Low Angle Run-Ins (Long and Short Distance):

3.4.8.6. **Q.** Consistently demonstrated the ability to place the mobile in a position to provide effective support to the pilot. Vehicle control was positive at all times, with the demonstrated ability to remain in position once joined with the aircraft.

3.4.8.7. **Q-.** Demonstrated minimum acceptable ability to place the mobile in a position to provide effective support to the pilot. Vehicle control was acceptable and safe.

3.4.8.8. **U.** Exceeded Q- criteria. Consistently failed to place the mobile in an acceptable position. Vehicle control was lacking or unsafe. Unable to perform mobile duties.

3.4.9. Area 1037--Mobile Calls:

3.4.9.1. 10 Feet to 5 Feet:

3.4.9.2. **Q.** Altitude calls were largely accurate. Any advisory or directive calls were timely, accurate, and correct.

3.4.9.3. **Q-.** Altitude calls were occasionally accurate. Advisory and directive calls were slow, or occasionally inaccurate or incorrect. Deviations, omissions, or errors did not affect safety or mission accomplishment.

3.4.9.4. **U.** Exceeded Q- criteria. Altitude calls were consistently inaccurate. Failed to make advisory or directive calls which affected safety of flight.

3.4.9.5. 4 Feet to Touchdown:

3.4.9.6. **Q.** Altitude calls were largely accurate. Any advisory or directive calls were timely, accurate, and correct. Analysis of any issues with the landing were correct.

3.4.9.7. **Q-.** Altitude calls were occasionally accurate. Advisory and directive calls were slow, or occasionally inaccurate or incorrect. Analysis of any issues with the landing were mostly correct. Deviations, omissions, or errors did not affect safety or mission accomplishment.

3.4.9.8. **U.** Exceeded Q- criteria. Altitude calls were consistently inaccurate. Failed to make advisory or directive calls which affected safety of flight. Unable to analyze any issues with the landing.

3.5. EPE Criteria.

3.5.1. See above for the following criteria:

3.5.1.1. Area 29--Aircraft General Knowledge.

3.5.1.2. Area 37--Cockpit/Crew Resource Management.

3.5.1.3. Area 96--EA/EP/AAMD.

3.5.2. Area 301--Emergency Procedures/Aircraft Malfunctions (General):

3.5.2.1. **Q.** Correct, immediate response to non-Boldface malfunction. Recognized and analyzed malfunction in a timely manner. Effectively used checklist.

3.5.2.2. **Q-.** Response to certain required steps in emergency procedure was slow or confused. Slow to recognize or analyze malfunction. Used the checklist when appropriate, but slow to locate required sections or data.

3.5.2.3. **U.** Unable to analyze malfunction or take corrective action. Did not reference checklist when appropriate, or lacked familiarity with the arrangement or content.

3.5.3. Area 305--Weapons System/Payload Operation:

3.5.3.1. **Q.** Thorough knowledge of weapon system capabilities, limitations, and degraded system operations.

3.5.3.2. **Q-.** Knowledge level is sufficient to safely accomplish the mission. Deficiencies noted in either depth of knowledge or comprehension.

3.5.3.3. **U.** Exceeded Q- criteria. Knowledge level is unsatisfactory.

3.5.4. Pre-Takeoff.

3.5.4.1. Area 412 is graded using the criteria for Boldface Procedures (Critical):

3.5.4.2. **Q.** Correct, immediate response to Boldface.

3.5.4.3. **U.** Incorrect response to Boldface.

3.5.4.4. The following items are graded using the same criteria as Area 301.

3.5.4.5. Area 321--Hydraulic Emergency Procedures/Aircraft Malfunctions (Pre-Takeoff).

3.5.4.6. Area 331--Electrical Emergency Procedures/Aircraft Malfunctions (Pre-Takeoff).

3.5.4.7. Area 341--Fuel Emergency Procedures/Aircraft Malfunctions (Pre-Takeoff).

3.5.4.8. Area 351--Environment Control System (ECS)/Oxygen Emergency Procedures/Aircraft Malfunctions (Pre-Takeoff).

3.5.4.9. Area 361--Engine/IPP Emergency Procedures/Aircraft Malfunctions (Pre-Takeoff).

3.5.4.10. Area 362--Fire (Ground).

3.5.4.11. Area 364--Hot Start.

3.5.4.12. Area 366--Hung Start/No Start/Tailpipe Fire.

3.5.4.13. Area 371--Avionics Emergency Procedures/Aircraft Malfunctions (Pre-Takeoff).

3.5.4.14. Area 372--BCCU Fault

3.5.4.15. Area 381--Weapons Emergency Procedures/Aircraft Malfunctions (Pre-Takeoff).

3.5.4.16. Area 391--Flight Control System (FCS) Emergency Procedures/Aircraft Malfunctions (Pre-Takeoff).

3.5.4.17. Area 401--Landing Gear/Wheel Brakes Emergency Procedures/Aircraft Malfunctions (Pre-Takeoff).

3.5.4.18. Area 411--Emergency Procedures/Aircraft Malfunctions (Pre-Takeoff).

3.5.5. Takeoff.

3.5.5.1. Areas 454 and 474 are graded using the criteria for Boldface Procedures (Critical):

3.5.5.2. **Q.** Correct, immediate response to Boldface.

3.5.5.3. **U.** Incorrect response to Boldface.

3.5.5.4. The following items are graded using the same criteria as Area 301.

3.5.5.5. Area 421--Hydraulic Emergency Procedures/Aircraft Malfunctions (Takeoff).

3.5.5.6. Area 431--Electrical Emergency Procedures/Aircraft Malfunctions (Takeoff).

3.5.5.7. Area 441--Fuel Emergency Procedures/Aircraft Malfunctions (Takeoff).

3.5.5.8. Area 451--Environment Control System (ECS)/Oxygen Emergency Procedures/Aircraft Malfunctions (Takeoff).

3.5.5.9. Area 461--Engine/IPP Emergency Procedures/Aircraft Malfunctions (Takeoff).

3.5.5.10. Area 462--Engine Failure on Takeoff.

3.5.5.11. Area 463--Abort.

3.5.5.12. Area 466--Fire or Overheat Warning Light.

3.5.5.13. Area 467--Low Thrust or Partial Power Loss.

3.5.5.14. Area 471--Avionics Emergency Procedures/Aircraft Malfunctions (Takeoff).

3.5.5.15. Area 481--Weapons Emergency Procedures/Aircraft Malfunctions (Takeoff).

3.5.5.16. Area 491--Flight Control System (FCS) Emergency Procedures/Aircraft Malfunctions (Takeoff).

3.5.5.17. Area 501--Landing Gear/Wheel Brakes Emergency Procedures/Aircraft Malfunctions (Takeoff).

3.5.5.18. Area 507--Hung Pogo.

3.5.5.19. Area 511--Emergency Procedures/Aircraft Malfunctions (Takeoff).

3.5.6. In-Flight.

3.5.6.1. See above for the following criteria:

3.5.6.2. Area 89--Ingress (Primary/Backup Combat/SRO Navigation Procedures.

3.5.6.3. Area 94--Evasive Maneuvers/Threat Reactions.

3.5.6.4. Area 96--EA/EP/AAMD.

3.5.6.5. Areas 559, 617, 626, and 627 are graded using the criteria for Boldface Procedures (Critical):

3.5.6.6. **Q.** Correct, immediate response to Boldface.

3.5.6.7. **U.** Incorrect response to Boldface.

3.5.6.8. The following items are graded using the same criteria as Area 301.

3.5.6.9. Area 521--Hydraulic Emergency Procedures/Aircraft Malfunctions (In-Flight).

3.5.6.10. Area 523--Hydraulic System Failure.

3.5.6.11. Area 525--AMAD/PTO Shaft Failure.

3.5.6.12. Area 526--AMAD Oil Pressure Low.

3.5.6.13. Area 527--AMAD Oil Temp High.

3.5.6.14. Area 528--Partial Hydraulic Pressure Loss.

3.5.6.15. Area 531--Electrical Emergency Procedures/Aircraft Malfunctions (In-Flight).

3.5.6.16. Area 532--Complete Electrical Failure.

3.5.6.17. Area 541--Fuel Emergency Procedures/Aircraft Malfunctions (In-Flight).

3.5.6.18. Area 544--Fuel Cross Transfer Pump Failure.

3.5.6.19. Area 545--Fuel Boost Pump Failure.

3.5.6.20. Area 551--Environment Control System (ECS)/Oxygen Emergency Procedures/Aircraft Malfunctions (In-Flight).

3.5.6.21. Area 552--Cockpit Temperature Control Failure.

3.5.6.22. Area 553--Cockpit Smoke.

3.5.6.23. Area 557--Pressurization System Emergency Operation.

3.5.6.24. Area 559--Oxygen System Malfunction.

3.5.6.25. Area 561--Engine/IPP Emergency Procedures/Aircraft Malfunctions (In-Flight).

3.5.6.26. Area 564--Flameout Procedures (Configuration Through Rollout).

3.5.6.27. Area 569--Oil System Malfunctions.

3.5.6.28. Area 571--Avionics Emergency Procedures/Aircraft Malfunctions (In-Flight).

3.5.6.29. Area 581--Weapons Emergency Procedures/Aircraft Malfunctions (In-Flight).

3.5.6.30. Area 591--Flight Control System (FCS) Emergency Procedures/Aircraft Malfunctions (In-Flight).

3.5.6.31. Area 592--Controllability Check.

3.5.6.32. Area 601--Landing Gear/Wheel Brakes Emergency Procedures/Aircraft Malfunctions (In-Flight).

3.5.6.33. Area 611--Emergency Procedures/Aircraft Malfunctions (In-Flight).

3.5.6.34. Area 613--Spin/Out of Control.

3.5.6.35. Area 617--Ejection.

3.5.6.36. Area 618--Before Ejection/Bailout.

3.5.6.37. Area 620--Ditching.

3.5.6.38. Area 628--Emergency Descent.

3.5.6.39. Area 629--Uncommanded Scramble Handle Initiation.

3.5.6.40. Area 630--Q-Bay Altitude High.

3.5.6.41. Area 614--Unusual Attitude Recoveries.

3.5.6.42. **Q.** Smooth, positive recovery to level flight with correct recovery procedures.

3.5.6.43. **Q-.** Slow to analyze attitude, or erratic in recovery to level flight. Correct recovery procedures used.

3.5.6.44. **U.** Unable to determine attitude. Improper recovery procedures were used.

3.5.6.45. Area 615--AFMAN 11-217 Procedures/Heads-Up Display (HUD)-Out Approach/Use of Standby Instruments.

3.5.6.46. **Q.** Performed IAW procedures and techniques outlined in the flight manual and governing directives. Displayed effective instrument cross-check. Aircraft control was smooth and positive, with consistent airspeed, heading, and altitude control.

3.5.6.47. **Q-.** Performance included minor deviations, omissions, or errors from procedures and techniques outlined in the flight manual and governing directives. Instrument cross-check was slow. Aircraft control was occasionally abrupt to compensate for recognition of errors, with minor deviations in airspeed, heading, and/or altitude control.

3.5.6.48. **U.** Performance included major deviations, omissions, or errors from procedures and techniques outlined in the flight manual and governing directives. Displayed inadequate instrument cross-check, with erratic or unsafe airspeed, heading, and/or altitude control.

3.5.6.49. Area 616--Alternate/Divert Airfields.

3.5.6.50. **Q.** Made proper divert decision and correctly performed initial actions required for diverting.

3.5.6.51. **Q-.** Slow to make divert decision, and/or slow to perform initial actions required for diverting.

3.5.6.52. **U.** Failed to make proper divert decision, and/or failed to perform initial actions required for diverting.

3.5.7. **Landing.** The following items are graded using the same criteria as Area 301.

3.5.7.1. Area 631--Hydraulic Emergency Procedures/Aircraft Malfunctions (Landing).

3.5.7.2. Area 641--Electrical Emergency Procedures/Aircraft Malfunctions (Landing).

3.5.7.3. Area 651--Fuel Emergency Procedures/Aircraft Malfunctions (Landing).

3.5.7.4. Area 661--Environment Control System (ECS)/Oxygen Emergency Procedures/Aircraft Malfunctions (Landing).

3.5.7.5. Area 671--Engine/IPP Emergency Procedures/Aircraft Malfunctions (Landing).

3.5.7.6. Area 681--Avionics Emergency Procedures/Aircraft Malfunctions (Landing).

3.5.7.7. Area 691--Weapons Emergency Procedures/Aircraft Malfunctions (Landing).

3.5.7.8. Area 701--Flight Control System (FCS) Emergency Procedures/Aircraft Malfunctions (Landing).

3.5.7.9. Area 711--Landing Gear/Wheel Brakes Emergency Procedures/Aircraft Malfunctions (Landing).

3.5.7.10. Area 721--Emergency Procedures/Aircraft Malfunctions (Landing).

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Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 11-200, *Aircrew Training, Standardizations, and General Operations Structure, 19 January 2012*

AFI 11-202 Volume 2, Aircrew Standardization/Evaluation Program, 13. September 2010

AFI 11-290, Cockpit/Crew Resource Management, *15 Oct 2012*

AFI 33-360, *Publications and Forms Management*, *1 Dec 15*

AFMAN 11-217 Volume 1, Instrument Flight Procedures, *22 Oct 2010*

AFMAN 33-363, Management of Records, *01 Mar 2008*

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

AFPD 11-4, Aviation Service, *1 Sep 2004*

AFTTP 3-1.1, General Planning and Employment Considerations,5 May 2008

AF RDS on the AF Portal at the AFRMS link

Forms Adopted

AF Form 8, Certificate of Aircrew Qualification

AFTO Form 781, ARMS Aircrew/Mission Flight Data Document

AF Form 847, Recommendation for Change of Publication

AF Form 4031, CRM Skills Training/ Evaluation Form

Abbreviations and Acronyms

AAMD—All Aspect Missile Defense

ACC—Air Combat Command

AF—Air Force

AFRC—Air Force Reserve Command

AFTTP—Air Force Tactics, Techniques, and Procedures

AMAD—Airframe Mounted Accessory Drive

ANG—Air National Guard

AOA—Angle of Attack

ARMS—Aviation Resource Management System

ASR—Airport Surveillance Radar

ATC—Air Traffic Control

BCCU—Battery Charger Control Unit

BMC—Basic Mission Capable

CJCSI—Chairman, Joint Chiefs of Staff Instruction

CNI—Communication, Navigation, and IFF

CRM—Cockpit/Crew Resource Management

CRO—Criterion Reference Objectives

CTP—Companion Trainer Program

DOC—Designed Operational Capability

DRU—Direct Reporting Unit

EA—Electronic Attack

ECS—Environmental Control System

EP—Electronic Protection

EPE—Emergency Procedures Evaluation

EWS—Electronic Warfare System

FCS—Flight Control System

FE—Flight Examiner

FOA—Field Operating Agency

FTU—Formal Training Unit

GPS—Global Positioning System

HHQ—Higher Headquarters

HMD—Heads Mounted Display

IAW—In Accordance With

IFF—Identification, Friend or Foe

ILS—Instrument Landing System

INS—Inertial Navigation System

INSTM—Instrument

IP—Instructor Pilot

MAJCOM—Major Command

MAP—Missed Approach Point

MDA—Minimum Descent Altitude

MRT—Mission Rehearsal Trainer

MSN—Mission

NM—Nautical Mile

PA—Privacy Act

PAR—Precision Approach Radar

QUAL—Qualification

RDS—Records Disposition Schedule

SRO—Sensitive Reconnaissance Operations

TACAN—Tactical Air Navigation

USAF—United States Air Force

VDP—Visual Descent Point

VFR—Visual Flight Rules

Terms

Circling Approach—A visual maneuver performed IAW IFR procedures to align the aircraft with the designated landing runway when a straight-in landing from an instrument approach is not possible or available.

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

Emergency Procedures Evaluation—An evaluation of crew general knowledge and responsiveness to critical and non-critical emergency procedures conducted by a FE in an approved ATD. An EPE may be administered orally if an appropriate training device is not available.

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

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

Major—Detracted from mission accomplishment, adversely affected use of equipment, or violated safety.

High Sortie—A sortie flown above FL600 on which at least one RAP event listed in Tables 4.2 through 4.4 is accomplished. A high sortie may logged in training, or when conducting operational check flights (OCF), Functional Check Flights FCFs, BUSY RELAY missions, test missions, or actual sensor employment either operationally or in support of an exercise.

Instrument Sortie—Accomplished by completing at least four of the following events on a single sortie: weather penetration, precision approach, non-precision approach, missed approach, holding, instrument departure procedure (IDP), or standard terminal arrival routing (STAR). Must be flown in the TU-2S under direct IP supervision. Do not count an instrument evaluation conducted IAW AFI 11-202V2 and AFI 11-2U-2V2 as an instrument sortie. If possible, approaches should be flown at non-familiar airfields.

Instrument Approach—Precision or non-precision instrument approach procedure flown using instrument guidance to navigate from the final approach fix to a landing (full stop or touch-and-go) or missed approach.

Key Words and Definitions—"Will" and "Shall" indicate a mandatory requirement. ―Should is normally used to indicate a preferred, but not mandatory, method of accomplishment. ―May indicates an acceptable or suggested means of accomplishment.

Landing, Rear Cockpit (TU-2S IP)—Landing accomplished by a qualified TU-2S IP from the rear cockpit.

Low Sortie—A sortie flown for the purpose of practicing instrument approaches, and normal/emergency patterns and landings.

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

Major—Detracted from mission accomplishment, adversely affected use of equipment, or violated safety

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

Major—Detracted from mission accomplishment, adversely affected use of equipment, or violated safety.

Mobile Officer—A qualified U-2 pilot who provides safety-of-flight oversight and necessary assistance to a U-2 mission pilot.

Mobile Vehicle—A high-performance chase vehicle with two-way radio communication and operated by a Mobile Officer.

Missed Approach—A maneuver performed as specified on an instrument approach procedure when the approach cannot be completed to a landing. May be logged for an actual missed approach, or when simulating a safe landing is not possible.

Night Landing—Landing accomplished between the end of evening civil twilight and beginning of morning civil twilight, as published in the Air Almanac.

No Flap Landing—Landing with a flap setting of less than 20 degrees, inclusive of landings in a gust-up configuration.

No Voice Landing—A landing executed without altitude calls from the mobile officer.

Non-Precision Approach—A non-precision instrument approach procedure flown using instrument guidance (course only) to navigate from the final approach fix to a landing (full stop or touch-and-go), missed approach, or circling maneuver

Omission—To leave out a required action or annotation.

Precision Approach—A precision instrument approach procedure flown using instrument guidance (course and glidepath) to navigate from the final approach fix to a landing (full stop or touch-and-go) or missed approach.

Simulated Flame-out Pattern (SFO)—Visual pattern flown while simulating an engine malfunction. Includes precautionary patterns.

Weather Penetration—Accomplished by flying either a low-altitude instrument approach procedure, or high-altitude weather penetration. May not include radar vectors after arrival at the initial approach fix, unless defined as a required portion of the defined procedure.