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SECRETARY OF THE AIR FORCE**

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***Flying Operations***

**F-35—AIRCREW TRAINING**

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This volume implements AFD 11-2, *Aircraft Rules and Procedures*; AFD 11-4, *Aviation Service*; and AFI 11-202, Volume 1, *Aircrew Training*. It establishes the minimum Air Force standards for training and qualifying personnel performing duties in the F-35A. This publication applies to the Air National Guard (ANG) and US Air Force Reserve (AFRC). Selected paragraphs of this publication do not apply to all Air Force units. When an exception exists to the requirements of a paragraph, the exception is indicated in a parenthetical within the paragraph, or by using subparagraphs directed at specific units. Major Commands (MAJCOMs)/Direct Reporting Units (DRU)/ Field Operating Agency (FOA) will coordinate proposed MAJCOM/DRU/FOA-level supplements to this volume with HQ ACC/A3TO and USAF/A3O-AT, prior to publication. **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. See paragraph **1.3** for guidance on submitting comments and suggesting improvements to this publication.

The authority to collect and maintain the records prescribed in this instruction are 37 USC 301a, Incentive Pay; Public Law 92-204 (Appropriations Act for 1973), Section 715; Public Law 93-570 (Appropriations Act for 1974); Public Law 93-294 (Aviation Career Incentive Act of 1974); DOD Instruction 7730.57, Aviation Career Incentive Act and Required Annual Report; AFI 11-401, Aviation Management; and E.O. 9397, Numbering System for Federal Accounts Relating to Individual Persons, November 22, 1943 as amended by Executive Order 13478, Amendments to Executive Order 9397 Relating to Federal Agency Use of Social Security Numbers, November 18, 2008. System of records notice F011 AF XO A, Aviation Resource Management (ARMS), applies.

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<b>Chapter 1—GENERAL INFORMATION</b>	<b>5</b>
1.1. Abbreviations, Acronyms, and Terms. ....	5
1.2. Responsibilities: .....	5
1.3. Processing Changes: .....	6
1.4. Training. ....	6
1.5. Training Concepts and Policies: .....	8
1.6. RAP Policy and Management: .....	9
1.7. Training Sortie Program Development: .....	10
1.8. Training Records and Reports. ....	11
1.9. Pilot Utilization Policy: .....	11
1.10. Sortie Allocation Guidance: .....	11
1.11. Waiver Authority: .....	12
<b>Chapter 2—INITIAL QUALIFICATION TRAINING (IQT)</b>	<b>13</b>
2.1. General. ....	13
2.2. In-unit Training. ....	13
2.3. Prerequisites. ....	13
2.4. Ground Training. ....	13
2.5. Flying Training: .....	13
2.6. IQT for Senior Officers: .....	14
<b>Chapter 3—MISSION QUALIFICATION TRAINING (MQT)</b>	<b>15</b>
3.1. General. ....	15
3.2. Ground Training: .....	15
3.3. Simulator Training: .....	16
3.4. Flying Training. ....	16
3.5. Initial Aircrew Chemical Defense Training (ACDT). ....	18
<b>Chapter 4—CONTINUATION TRAINING (CT)</b>	<b>20</b>

	4.1. General. ....	20
	4.2. Ground Training. ....	20
	4.3. Flying Training. ....	22
	4.4. Special Categories: ....	23
	4.5. Multiple Qualification/Currency: ....	24
	4.6. Currencies/Recurrencies/Requalifications: ....	25
Table	4.1. F-35A Pilot Currencies. ....	25
	4.7. Regression (N/A to CB/TF-coded units): ....	28
	4.8. End of Cycle Requirements. ....	29
	4.9. Proration of End-of-Cycle Requirements. ....	29
Table	4.2. Proration Allowance. ....	30
	4.10. Regaining CMR/BMC Status: ....	32
	4.11. Example of the Lookback, Regression, Proration, and Requalification Process: ..	32
Figure	4.1. Regression Flow Chart. ....	33
	4.12. Instrument Training. ....	33
	4.13. G-Awareness Continuation Training. ....	34
	4.14. Low/Slow Speed Electronic Identification (EID)/VID Procedures: ....	35
<b>Chapter 5—WEAPONS EMPLOYMENT QUALIFICATION</b>		<b>36</b>
	5.1. General. ....	36
	5.2. Initial qualification (QUAL): ....	36
	5.3. CT qualification (QUAL): ....	36
	5.4. Familiarization (FAM): ....	37
	5.5. Weapons Employment Parameters. ....	37
	5.6. Full Scale Inert/Live Ordnance. ....	37
<b>Chapter 6—SPECIALIZED TRAINING</b>		<b>38</b>
	6.1. Specialized Training Programs. ....	38
	6.2. Flight Lead (FL) Upgrade. ....	38
	6.3. Instructor Pilot (IP) Upgrade. ....	41
	6.4. Mission Commander (MCC) Upgrade. ....	44
	6.5. Simulator Instructor (SI). ....	45
	6.6. Electro-Optical Targeting System (EOTS): ....	45
	6.7. Electro-Optical Distributed Aperture System (DAS) Qualification Program: .....	46
	6.8. FAC(A) Upgrade. ....	49

	6.9.	Low Altitude Step-Down Training (LASDT). .....	54
Table	6.1.	LOWAT Categories. ....	54
	6.10.	Nuclear Certification. ....	56
	6.11.	F-35A Block Differences Training. ....	56
	6.12.	Contingency/Exercise Spin-Up Training This training will be conducted prior to support of contingency operations (if time permits) or exercises. ....	57
	6.13.	Forms Adopted. ....	57
	<b>Attachment 1—GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION</b>		<b>59</b>
	<b>Attachment 2—GLOSSARY OF MISSION/SORTIE AND EVENT DEFINITIONS</b>		<b>71</b>

## Chapter 1

### GENERAL INFORMATION

#### 1.1. Abbreviations, Acronyms, and Terms. See Attachment 1.

#### 1.2. Responsibilities:

1.2.1. HQ ACC/A3 is designated as the responsible agency for this volume IAW AFPD 11-2. HQ ACC/A3 will:

1.2.1.1. Chair semiannual ACC Realistic Training Review Boards (RTRBs) to review ground and flying training requirements/programs for Combat Air Force (CAF) units. RTRB participants will include applicable ACC active and reserve component representatives. MAJCOM/A3s with major weapons systems for which ACC is lead command will be invited to send representatives and/or inputs.

1.2.1.2. Process all change requests.

1.2.2. All user MAJCOMs will:

1.2.2.1. Determine training requirements to meet expected unit tasking.

1.2.3. DRUs will:

1.2.3.1. Provide standard instructional texts to support operational weapons/tactics training. Forward copies to each MAJCOM, Numbered Air Force (NAF)/A3, and to each CAF wing/group.

1.2.3.2. Review, update, and distribute changes to instructional texts annually.

1.2.3.3. Review subordinate unit training programs annually.

1.2.4. Wings/Groups will:

1.2.4.1. Develop programs to ensure training objectives are met. Assist subordinate units in management of training programs, ensure programs meet unit needs, and provide necessary staff support. ACC wings/groups will also assist ANG and AFRC unit training programs as required/ requested IAW the AFRC unit advisory support program.

1.2.4.2. Attach Aircrew Position Indicator (API) -6/8 flyers to a flying squadron.

1.2.4.3. Except when otherwise mandated, designate the training level to which each API – 6 (Air Reserve Components (ARC): all flyers) will train. Upon request provide MAJCOM/A3T (ANG: ACC/A3G, AFRC: ACC/A3U) with a list of Basic Mission Capable (BMC) and Combat Mission Ready (CMR) manning positions. Review programs and manning position designations annually.

1.2.4.4. Forward wing syllabi to MAJCOM/A3T for review according to MAJCOM directives.

1.2.5. Squadron supervision (ARC: Appropriate operations supervisor) will:

1.2.5.1. Ensure adequate continuity and supervision of individual training needs, experience, and proficiencies of assigned/attached pilots.

1.2.5.2. Review training and evaluation records of newly-assigned pilots and those completing formal training to determine required training. Orient Ready Aircrew Program (RAP) missions to develop combat skills or practice tactical employment relevant to expected unit tasking. Provide guidance to ensure only effective RAP missions are logged. See [Attachment 2](#) for RAP mission definitions.

1.2.5.3. Except when otherwise mandated, determine missions/events in which individual Basic Aircraft Qualification (BAQ), BMC, and Mission Ready (MR) pilots will maintain qualification versus familiarization.

1.2.5.4. Determine utilization of BMC pilots.

1.2.5.5. Determine how many and which BMC and CMR pilots will carry special capabilities/ qualifications.

1.2.5.6. Identify the levels of supervision required to accomplish the required training, unless specifically directed.

1.2.5.7. Assist the wing/group in developing the unit training programs.

1.2.5.8. Monitor individual assigned/attached pilot currencies and requirements.

1.2.5.9. Ensure pilots only participate in missions, events, and tasks for which they are adequately prepared, trained, and current.

1.2.5.10. Submit a RAP training report to the appropriate MAJCOM/A3T (ANG: ACC/A3G) branch periodically during the training cycle according to MAJCOM directive. Submit an out-of-cycle report anytime MAJCOM assistance is required to prepare for Designed Operational Capability (DOC) or a deployment tasking. **Note:** Exempt for designated test (CB-coded) and designated training (TF-coded) units.

1.2.6. Individual pilots will:

1.2.6.1. Hand carry all available training records, gradebook, and Flight Evaluation Folders (FEF) to assist the gaining unit in assessing qualifications and training requirements.

1.2.6.2. Complete training requirements and currencies within the guidelines of this instruction.

1.2.6.3. Participate only in ground and flying activities for which they are qualified, current, and prepared.

### 1.3. Processing Changes:

1.3.1. Forward recommendations for change to this volume to the office of primary responsibility (OPR) on AF Form 847, *Recommendation for Change of Publication* IAW AFI 11-215, *USAF Flight Manuals Program (FMP)*.

**1.4. Training.** Training programs are designed to progress pilots from Initial Qualification Training (IQT) (B-Course or Transition/Requalification Training [TX]), then to Mission Qualification Training (MQT), and finally to Continuation Training (CT).

1.4.1. IQT provides the training necessary to initially qualify pilots in a basic position and flying duties without regard to a unit's mission. Upon completion of IQT, the pilots attain

BAQ status. BAQ is a prerequisite for MQT. Except for General Officers above wing level, BAQ is not a long term qualification status. Waiver authority for pilots, other than general officers above the wing level, to remain BAQ is MAJCOM/A3 (ANG: ACC/A3G).

1.4.2. MQT provides the training necessary to initially qualify or requalify pilots in a specific position and flying duties to perform the missions assigned to a specific unit. Pilots maintain BAQ status until they complete MQT. Completion of MQT or Formal Training Unit (FTU) instructor course is a prerequisite for BMC and CMR. Pilot will then be assigned to either a CMR or BMC training status.

1.4.3. Continuation Training (CT). There are two aspects of CT. The first consists of pilot training in the basic flying skills. These skills ensure safe operation of the aircraft. The second consists of specific mission-related training required to accomplish the unit's assigned missions contained in the RAP Tasking Memo (RTM). The RTM takes precedence over this instruction and may contain updated requirements and events not yet incorporated in Attachment 2.

1.4.4. **Ready Aircrew Program (RAP).** The RAP program is designed to focus training on capabilities needed to accomplish a unit's core tasked missions. Following completion of IQT and MQT, pilots will have received training in all the basic missions of a specific unit unless excluded in [Chapter 3](#).

1.4.4.1. **Mission Ready (MR).** An aircrew member who has satisfactorily completed mission qualification training and maintains qualification and proficiency in the command or unit operational mission.

1.4.4.2. **Combat Mission Ready (CMR).** An aircrew member who has satisfactorily completed mission qualification training and maintains qualification and proficiency in the command or unit combat mission..

1.4.4.3. All designated combat (CC-coded) unit active duty API-1 positions, flying Squadron Commander (SQ/CC) and Duty Officer (DO) positions are designated CMR positions. Operations Group Commanders (OG/CCs) may designate other API-6 positions not assigned to the flying squadron as CMR. (Exception: If a unit is overmanned, the SQ/CC may elect to train the front line of their Unit Manning Document (UMD) API-1s to CMR and designate the overage BMC. In this case, priority should be given to inexperienced pilots with at least 50 percent, if available, designated CMR). (ARC/TFI: Any pilot may be designated CMR at OG/CC discretion). CMR pilots maintain proficiency and qualification in all core missions of the flying unit to which they are assigned or attached. CMR pilots maintain currencies which affect CMR status, accomplish all core designated flight training (missions and events), and all mission ground training. Failure to complete this training or maintain these currencies results in regression to non-CMR (N-CMR) status unless waived by appropriate authority.

1.4.4.4. **Basic Mission Capable (BMC).** An aircrew member who has satisfactorily completed mission qualification training, is qualified in some aspect of the unit mission, but does not maintain MR/CMR status. The aircrew member must be able to attain full qualification to meet operational taskings within 30 days.

1.4.4.5. All non-CMR active duty wing pilot positions are designated BMC positions. BMC designations are assigned to pilots who have a primary job performing wing

supervision or staff functions that directly support the flying operation, or are FTU instructors, Weapons School (WS) instructors, pilots assigned to active flying billets in units without assigned aircraft (i.e. 549 CTS [Air Warrior I], etc.), or operational test pilots. For those missions in which they maintain familiarization only, BMC pilots must be able to attain proficiency and qualification in 30 days or less. BMC pilots accomplish all mission related ground training designated by their attached SQ/CC. BMC pilots may deploy and may participate in any mission for which they are proficient and qualified, without additional training, as determined by the SQ/CC. Failure to complete BMC required training results in regression to non-BMC (N-BMC) status. AFRC and AFRC TFI BMC training events will be directed by RAP Tasking Memo.

1.4.4.6. BMC pilots assigned to units without assigned aircraft (i.e. 549 CTS [Air Warrior I], etc.) will fly a RAP mix as determined by the unit commander consistent with their unit's tasking. RAP events and weapon requirements are determined by the unit commander.

1.4.4.7. **N-CMR/N-BMC.** Pilots that regress to N-CMR/N-BMC status will accomplish the requirements in accordance with paragraph 4.10 While N-CMR/N-BMC, pilots may perform missions (including exercise and contingencies) in which they are current, qualified, and either familiar or proficient.

1.4.4.8. **Specialized Training.** Specialized training is training in any special skills necessary to carry out the unit's assigned missions that is not required by every pilot such as Flight Lead (FL) Upgrade (FLUG), Instructor Pilot (IP) Upgrade (IPUG), Forward Air Controller (Airborne) (FAC(A)), etc. See Chapter 6 for specialized training requirements. Specialized training is normally accomplished after a pilot is assigned CMR/BMC status, and is normally in addition to CMR/BMC requirements. Unless otherwise specified, pilots in CMR or BMC positions may hold special capabilities/qualifications as long as any additional training requirements are accomplished.

## 1.5. Training Concepts and Policies:

1.5.1. Units will design training programs to achieve the highest degree of combat readiness consistent with flight safety and resource availability. Training must balance the need for realism against the expected threat, pilot capabilities, and safety. This instruction provides training guidelines and policies for use with operational procedures specified in applicable flying/operations publications.

1.5.2. Units will emphasize RAP training missions on either basic combat skills or scenarios that reflect procedures and operations based on employment plans, location, current intelligence, and opposition capabilities. Tactical training will include use of inert and live ordnance, threat simulators, countermeasures, and dissimilar aircraft as much as possible

1.5.3. ACC Training Support Squadron (ACC TRSS) will assist OG/CCs in development of training programs when/where tasked by the HQ ACC/A3. Other MAJCOMs may submit requests for training program support to the HQ ACC/A3. If validated, these requests will be prioritized and tasked to ACC TRSS. CB-coded units may develop syllabi to upgrade operational test pilots in support of specific test plans. These syllabi will be approved by the OG/CC and submitted to ACC TRSS.

1.5.4. **In-flight Supervision:**



1.5.4.1. Unless specifically directed, the SQ/CC determines the level of supervision necessary to accomplish the required training. If the mission objectives include introduction to tasks or instruction to correct previous discrepancies, then an IP may be required.

1.5.4.2. IPs and FL-qualified SQ supervisors may allow any pilot to lead portions of a mission if appropriately briefed. This provision will only be used to allow the pilot to practice events in which he is already qualified or to help determine if the pilot is ready for FLUG.

1.5.4.3. Flight leads may give their wingman the tactical lead for specific tasks. As a tactical lead, the wingman makes tactical decisions for the flight, but the flight lead retains overall authority and responsibility.

#### 1.5.5. Experienced Pilot (EXP)

1.5.5.1. An experienced pilot has one of the following:

1.5.5.1.1. 500 hours Primary Aerospace Vehicle Inventory (PAI).

1.5.5.1.2. 300 hours PAI with 1,000 hours (First Pilot (FP)/IP/Mission Pilot (MP)).

1.5.5.1.3. 100 hours PAI and previously fighter EXPERIENCED.

1.5.5.2. For pilots, fighter time is defined as FP/IP/MP hours logged in aircraft while assigned an Air Force Specialty Code (AFSC) of 11FX. OA-10 is considered fighter time.

1.5.5.3. (N/A AFRC) Hours logged in the mission rehearsal trainer (MRT)/full mission simulator (FMS) accomplishing RTM-approved missions will be counted as "hours" when determining experience level. RAP MRT/FMS mission hours will not exceed 20% of the total required to meet the experienced threshold (ex: 100 RAP MRT/FMS Mission hours out of 500 hours PAI). See the current RAP Tasking Memo for guidance on approved RAP MRT/FMS Missions and logging procedures.

### 1.6. RAP Policy and Management:

1.6.1. MAJCOMS determine their RAP Training cycle. This volume, along with the RAP Tasking memo and MAJCOM supplements, will establish the RAP mission requirements for each assigned training status and experience level.

1.6.2. MAJCOMS determine where variances from the RTM are authorized. However, SQ/CCs may still use variations in missions or events as a basis for regression.

1.6.3. An effective RAP training mission requires accomplishing a tactical or building block profile. Each mission requires successfully completing a significant portion of the relevant events as determined by the SQ/CC, RTM, and [Attachment 2](#).

1.6.3.1. Only one RAP training mission may be logged per sortie (day or night) unless separated by Air-to-Air Refueling (AAR). Each mission on either side of the AAR must stand alone as an effective RAP training mission. A maximum of two RAP missions per sortie may be logged under this rule.

1.6.4. In CC-coded units, the SQ/CC's first priority should be to train all designated pilots to CMR status. CMR status requires:

1.6.4.1. A 1-month lookback at the CMR sortie rate.

1.6.4.2. Qualification in all core missions and weapons events required at CMR.

1.6.4.3. Confirmation that CMR pilots can complete the prorated number of sortie/event requirements remaining by the end of the training cycle.

1.6.4.4. Completion of mission-related ground training, to include a current verification or certification.

1.6.5. Progression from BMC to CMR requires:

1.6.5.1. A 1-month lookback at the CMR rate.

1.6.5.2. Qualification in all core missions and weapons events required at CMR.

1.6.5.3. Completion of mission-related ground training, to include a current verification or certification.

1.6.5.4. Squadron CC certification.

1.6.6. SQ/CCs will determine and assign pilots that will train for and maintain special capabilities or qualifications. Special capability/qualification mission and event requirements are normally accomplished in addition to baseline CMR/BMC requirements except for mission commander and flight lead training.

1.6.7. End of Cycle training requirements are based on the pilot's experience level on the last day of the current training cycle.

1.6.8. CC-coded units converting to another MDS may fly pilots in CMR positions at the BMC rate if CMR sortie rates cannot be supported. One month prior to the operationally ready date, CMR pilots should be flown at a CMR rate. Active duty wings converting to new MDS are authorized one SQ equivalent (7/6 for 24/18 or less PAI) of additional API-6s during the conversion period. However, total wing staff flying the new aircraft shall not exceed new authorized total.

## **1.7. Training Sortie Program Development:**

1.7.1. Experiencing/Collateral sortie requirements must be considered when developing unit flying hour programs.

1.7.1.1. Experiencing sorties are additional training sorties necessary to achieve desired proficiency in optimum time. RAP missions may not provide sufficient hours to experience pilots to achieve overall unit experience levels.

1.7.1.2. Collateral sorties are not directly related to combat employment training but are necessary in day to day unit operations. These include, but are not limited to, functional check flights, ferry flights, deployments, and air shows. For the training cycle, the MAJCOM allocates a block of sorties to the unit for these purposes.

1.7.2. Attrition sorties are allocated to unit flying hour programs to compensate for non-effective training sorties. Non-effective sorties are logged when a training sortie is planned, but a major portion of valid training for that type of mission is not accomplished due to poor weather, In Flight Emergency (IFE), adversary fallout, etc. For CMR pilots, non-effective sorties will be logged (and not counted toward RAP totals) when Red Air allocations are

exceeded during a training. In order to accurately allocate the number of attrition sorties, it is essential that non-effective sorties are logged appropriately.

### **1.8. Training Records and Reports.**

1.8.1. Units will maintain pilot records for individual training and evaluations IAW:

1.8.1.1. AFI 11-202V1.

1.8.1.2. AFI 11-202, Volume 2, *Aircrew Standardization/Evaluation Program*.

1.8.1.3. AFI 11-401.

1.8.2. Units will track the following information for all pilots (as applicable):

1.8.2.1. F-35A specific ground training (not Ancillary Training).

1.8.2.2. Requirements and accomplishment of individual missions and events cumulatively for the training cycle.

1.8.2.3. RAP requirements and accomplishment using 1-month and 3-month running totals for look-back. **Note:** Exempt for CB/TF units.

1.8.2.4. Currencies.

1.8.2.5. Weapons employment qualification requirements in sufficient detail to document all employment attempts and hit/miss percentages in a Commercial off the Shelf (COTS) database of choice.

1.8.2.6. Document individual certifications on AF Form 4348, *USAF Aircrew Certifications*.

### **1.9. Pilot Utilization Policy:**

1.9.1. The overall objective is that pilots perform flying-related duties. Supervisors may assign pilots to valid, short-term tasks (escort officer etc.), but must continually weigh the factors involved, such as level of pilot tasking, flying proficiency, currency, and experience. For inexperienced pilots in the first year of their initial operational F-35A assignment, supervisors will limit the non-flying duties to those related to combat activities.

1.9.2. Duties required by various publications that may be assigned to CAF API-1 pilots are weapons and tactics officer, programmer, flight safety officer (FSO), Supervisor of Flying (SOF), mobility/contingency plans, training (except Aircrew Resource Management System (ARMS) documentation), squadron Standardization/Evaluation Liaison Officer (SELO), squadron aircrew flight equipment officer, electronic combat officer, and other duties directly related to flying operations. In some instances, such as squadron-assigned flying safety officers, API-1s may be attached to the wing. API-1s will not be attached to wing staffs or man wing staff positions unless total wing pilot API-1 manning is 100 percent or better. CCs will ensure wing staff pilots (API-6s) perform duties justified in MAJCOM manpower standards documents and authorized in UMDs. AFRC: OG/CC may designate API positions as required to meet unit requirement.

### **1.10. Sortie Allocation Guidance:**

1.10.1. Inexperienced API-1 pilots should receive sortie allocation priority over experienced pilots. Priorities for sortie allocation are as follows:

1.10.1.1. **Operational Units.** CMR API-1, MQT API-1, CMR API-6, MQT API-6, BMC (API- All).

1.10.1.2. **Combined Formal Training and Operational Units.** Formal syllabus training, CMR/API-1, MQT API-1, CMR API-6, MQT API-6, BMC (API-All).

1.10.1.3. **FTU and United States Air Force Weapon School (USAFWS).** Formal syllabus training, IPUG, Instructor CT, authorized staff personnel not performing Instructor or Flight Examiner (FE) duties.

1.10.1.4. **Test and Test Evaluation Squadron (TES) Units.** Requirements directed by MAJCOM, training required to prepare for assigned projects/tasking, BMC training requirements that cannot be accomplished on primary missions.

1.10.2. Wing API-6 authorizations are IAW unit manning documents.

1.10.3. For FTU-only wings, all API-6 pilots will maintain instructor status (optional for wing commander (WG/CC), OG/CC, functional check flight (FCF) pilots, and one other). These wings will fly API-1/6 pilots as required by Programmed Flying Training (PFT). For wings consisting of both FTU and operational units, at least one of the following pilots will maintain formal IP status: WG/CC, WG/Vice commander (CV), OG/CC, OG/Deputy commander (CD).

1.10.4. API-8 rated personnel flying authorizations, MAJCOM/Inspector General (IG) inspectors in API-8 billets, and Test Unit pilots will be IAW AFI 11-401 and MAJCOM guidance. MAJCOMS determine the training status and CT requirements for API-8 pilots. Test unit pilots will fly the BMC sortie rate as a minimum and should meet monthly BMC lookback. SQ/CCs will direct additional sorties if syllabus or test missions provide insufficient pilot proficiency training. Units should provide assigned API 6/8 flyers adequate resources to maintain minimum training requirements. However, API-6 flyer support will not come at the expense of the flying squadron's primary mission. API 6 flyers will accomplish basic skills events with allotted BMC sorties. API-8 IG flyers will strive to accomplish basic skills events with allotted BMC sorties. If attached units cannot meet attached flyer requirements, they must request relief IAW AFI 11-401, as supplemented. Units requiring flying hour adjustments for attached API-8 and applicable API-6 flyers must request program changes IAW MAJCOM directives.

## **1.11. Waiver Authority:**

1.11.1. With MAJCOM/A3 approval, waiver authority for all requirements of the RAP tasking memo is the OG/CC. Additional guidance may be provided in the memo. Unless specifically noted otherwise in the appropriate section, and also with MAJCOM/A3 approval, the OG/CC may adjust individual requirements in Chapter 4, Chapter 5, and Chapter 6, on a case-by-case basis, to accommodate variations in aircrew member experience and performance. For all other provisions of this volume, and IAW AFI 11-202 Vol 1, the waiver authority is MAJCOM/A3 (ANG: ACC/A3G).

## Chapter 2

### INITIAL QUALIFICATION TRAINING (IQT)

**2.1. General.** This chapter outlines IQT of pilots into the F-35A. IQT includes Basic (B-Course) and Transition/Requalification/Senior Officer (TX-Course) training and will normally be conducted during formal syllabus courses at a FTU whenever possible. Graduates of F-35A FTU will be proficient in air-to-air (A/A) and air-to-ground (A/G) mission tasks as indicated by the Training Task List/Course Training Standards (TTL/CTS) of the FTU syllabus. Students will graduate current and qualified in Air Combat Tactics (ACBT), Low Altitude Step Down Training (LASDT) CAT I (500'), sensor management, weapons employment qualification (AIM-120, AIM-9, laser guided bombs (LGBs), inertial aided munitions (IAMs), and air-to-ground (A/G) gun). All IQT students will be administered an instrument qualification evaluation and a mission qualification evaluation in the aircraft at FTU prior to graduation. These evaluations require the graduate to demonstrate basic instrument qualification proficiency and mission competency in both air-to-air and air-to-ground mission employment.

**2.2. In-unit Training.** IQT may be conducted IAW AFI 11-202V1 and this chapter using the appropriate formal school courseware. The following guidance applies to in-unit training.

2.2.1. MAJCOM/A3 (ANG: NGB/A3T) is approval authority to conduct local IQT, and is waiver authority to change the formal requirements of locally conducted IQT (ANG: ACC/A3G). Info MAJCOM/A3T.

2.2.2. MAJCOM/CC (ANG: ACC/CG) is the approval authority for senior officer in-unit training.

2.2.3. Requests to conduct local IQT will include the following:

2.2.3.1. Justification for the local training in lieu of formal course training.

2.2.3.2. Summary of individual's flying experience to include last centrifuge training date.

2.2.3.3. Date training will begin and expected completion date.

2.2.3.4. Requested exceptions to formal course syllabus, with rationale.

2.2.4. Successful completion of IQT requires the upgrading pilot to complete aircraft qualification and instrument qualification evaluations IAW AFI 11-202V2 and AFI 11-2F-35A, Volume 2, *Aircrew Evaluation*).

**2.3. Prerequisites.** Course prerequisites will be IAW the appropriate formal course syllabus and the USAF Education and Training Course Announcements (ETCA).

**2.4. Ground Training.** When IQT is conducted in-unit, ground training may be tailored to the individual's background and experience or peculiar local conditions. However, available and current reference materials, such as RTM, AFTTP 3-3, *Combat Aircraft Fundamentals--F-35A*, instructor guides, and audiovisual programs, should be used as supporting materials to the maximum extent possible. Simulator missions will be accomplished in the best simulator available.

**2.5. Flying Training:**

2.5.1. Mission sequence and prerequisites will be IAW the appropriate formal course syllabus.

2.5.2. Training will be completed within the time specified by the syllabus, as approved. Failure to complete within the specified time limit requires notification through MAJCOM/A3T to MAJCOM/A3 (ANG: ACC/A3G) with pilot's name, rank, reason for delay, planned actions, and estimated completion date.

2.5.3. Pilots in IQT will fly under IP supervision (chased) until completing the instrument qualification evaluation.

2.5.4. Formal course syllabus mission objectives and tasks are minimum requirements for IQT. Additional training due to student non-progression is available within the constraints of the formal course syllabus and may be added at the discretion of the SQ/CC.

## **2.6. IQT for Senior Officers:**

2.6.1. All formal training courses for senior officers (colonel selectees and above) will be conducted at FTUs unless waived IAW paragraph [2.2](#)

2.6.2. Senior officers must meet course entry prerequisites and will complete all syllabus requirements unless waived IAW syllabus directives and paragraph [2.2](#)

2.6.3. If senior officers must be trained at the base to which they are assigned they will be in formal training status. Unit duties will be turned over to appropriate deputies or vice commanders until training is completed. Exceptions to this policy must be approved by MAJCOM/CC (ANG: ACC/CG).

## Chapter 3

### MISSION QUALIFICATION TRAINING (MQT)

**3.1. General.** MQT is a unit developed training program that upgrades newly assigned B or TX course graduates to BMC/CMR to accomplish the unit mission. The culmination of initial MQT is CMR certification via successful completion of a tactical mission led by the SQ/CC or his designated squadron IP/supervisor. The mission elements are at the discretion of the SQ/CC, but as a minimum will include A/A and A/G elements unless either mission is excluded from that unit's DOC statement. Following successful completion of this mission, the SQ/CC will certify the upgrading pilot as CMR in the pilot's gradebook. For other newly assigned pilots MQT-LAO, Simulator (SIM) MQT-1 local area orientation (LAO)/Instruments, and appropriate theater-specific ground training events are the minimum requirements. Guidance in this chapter is provided to assist SQ/CCs in executing an OG/CC approved MQT program. Units are expected to further tailor their programs based on current qualification, experience, currency, documented performance, and formal training. Applicable portions of MQT may be used to create a requalification program for pilots who have regressed from BMC/CMR to specifically address deficiencies which caused regression.

3.1.1. MQT will be completed within 45 calendar days (ARC: 120 calendar days). Timing starts at the pilot's first duty day at the gaining operational unit. If a pilot elects to take leave prior to entering MQT, the timing will begin after the termination of the pilot's leave. Training is complete upon SQ/CC certification to CMR/BMC. Notify MAJCOM/A3T if delay beginning MQT due to security clearance exceeds 30 days. If training exceeds the specified limit, units will notify MAJCOM/A3 (ANG: ACC/A3G).

3.1.2. The following CMR/BMC training items are granted grace periods for completion after MQT: AAR and night training may be accomplished NLT 90 days (ARC: 180 days) from completion of MQT. Failure to comply will result in regression to N-CMR/N-BMC until training is complete. AAR and night training accomplished in IQT may fulfill MQT requirements as determined by the SQ/CC. Night training events require demonstrated proficiency and currency in similar day events, unless accomplished with an IP (chased).

3.1.3. Pilots in MQT will not fly in FLAG-level exercises or WS support sorties.

3.1.4. Prior to BMC/CMR certification, if not accomplished during FTU training, pilots must complete initial Weapons Employment Qualification IAW [Chapter 5](#) and RAP tasking memo.

3.1.5. Initial MQT training is intended to be a maximum of 7 sorties in length (including the certification sortie). Simulator missions may be added for proficiency at the discretion of the SQ/CC; however, if a pilot's initial MQT training program will exceed 7 aircraft sorties MAJCOM/A3T will be informed and details provided on why the MQT program will extend beyond either 7 sorties, or 45 days.

3.1.6. Newly assigned B course graduates entering the MQT Program will not be tasked with squadron additional duties of any type until certified as CMR by the SQ/CC.

### 3.2. Ground Training:

3.2.1. Units will develop blocks of instruction covering areas pertinent to the mission as determined by the SQ/CC. Training accomplished during IQT may be credited towards this requirement.

3.2.2. Pilots transferring from another MAJCOM require region-specific airspace procedures academics before flying.

3.2.3. **Initial Verification:** (N/A CB/TF-coded units): Initial verification will be completed within 60 days (ARC: 120 days) after completing MQT. Each pilot (not required for BMC) will demonstrate to a formal board a satisfactory knowledge of the squadron's assigned mission. Board composition will be established by the SQ/CC. Desired composition is SQ/CC or SQ/DO, weapons, electronic combat (EC), intelligence, and plans representatives.

### 3.3. Simulator Training:

3.3.1. **SIM MQT** profiles should be accomplished in the best available simulator. SIM MQT-1 is a prerequisite for the first MQT flight. Locally directed simulator missions should concentrate on squadron tasking and unique capabilities.

3.3.2. **SIM MQT--Local Area Orientation/Instruments.** Normal ground operations, standard departure(s), navigation, emergency airfield procedures and approaches, published penetration and approach to primary alternates and home base, emergency divert procedures, emergency procedures (EPs).

3.3.3. **SIM MQT-Day/Night Air-to-Air Procedures.** Trail departure, intercepts, EC equipment operation, threat detection, defensive reactions, F-35A employment including flow priorities and signature management in the low risk environment, post beyond visual range (BVR) transition to high-risk within visual range (WVR) environment (day only) from a detached (mutual support by presence) formation, switchology, EPs, sensor operation/employment, and weapons employment IAW squadron Unit Committed Munitions List (UCML).

3.3.4. **SIM MQT--Day/Night Air-to-ground Procedures.** Heavyweight takeoff, weapons deliveries (WD), jettison procedures, EC equipment operation, threat recognition and defensive reactions, signature management, local range procedures, emergency divert procedures, hung ordnance procedures, sensor operation/employment, and weapons employment IAW squadron UCML.

**3.4. Flying Training.** The appropriate missions from those listed below will be used to upgrade to BMC or CMR. Unit-developed MQT programs should use profiles typical of squadron missions. Maximum use of armament recording assets and captive missiles is encouraged on all MQT missions.

3.4.1. **Supervision.** A FL-qualified SQ supervisor or IP is required unless specified otherwise. The SQ/CC will determine the proper flight position of the supervisor/IP unless specified otherwise.

3.4.2. If more than 10 calendar days elapse between sorties, an additional review sortie will be flown before continuing in the program.

3.4.3. All pilots must conduct practice airborne emergency procedures training during any one of the MQT sorties. As a minimum, the training will consist of briefing, flying, and



debriefing a simulated critical action procedure scenario to include airborne communication with the SOF.

**3.4.4. Sortie Requirements.** The sorties listed in paragraphs **3.4.6**, ACBT Qualification, **3.4.7** A/G-Training, are suggested mission profiles that the SQ/CC may use to develop the unit's MQT program based on unit tasking. Pilots will demonstrate proficiency in the following additional minimum events during MQT:

3.4.4.1. **Trail departure**

3.4.4.2. Instrument approach (precision and non-precision)

3.4.4.3. Radar Trail Arrival

**3.4.5. MQT-LAO--Mission Objectives.** Practice local area orientation, local instrument procedures, airspace/range familiarization, and emergency airfield(s) overflight/approaches. B/TX course graduates may combine with MQT-aircraft handling characteristics (AHC).

**3.4.6. ACBT Training.** The following sorties (in sequence) will be used to become ACBT certified. Units may expand this program to achieve desired proficiency or capability; however, maximum sortie length of the MQT program is 7 sorties, including the certification sortie. ACBT programs for pilots with previous fighter experience may be individually tailored based on experience, currency, and documented performance. FTU graduates will meet the requirements of this paragraph.

**3.4.6.1. MQT-AHC--Mission Objectives.** Familiarize the pilot with aircraft maneuvering capabilities and limitations, by practicing advanced handling maneuvers. Specific Mission Tasks: High AOA/low speed recovery, vertical recovery, high and low speed turn rate/radius maneuvers, acceleration demonstrations.

**3.4.6.2. MQT-(Dissimilar) Basic Fighter Maneuvers/Maneuvering ((D)BFM)--Mission Objectives.** Demonstrate proficiency in basic fighter maneuvering skills. Specific Mission Tasks: Tactical formation, ranging exercises, A/A weapons employment, offensive, defensive and high aspect setups.

**3.4.6.3. MQT-(Dissimilar) Air Combat Tactics (D)ACT--Mission Objectives.** Demonstrate proficiency in element A/A employment. Specific Mission Tasks: Tactical formation, flow priorities and signature management, A/A weapons employment, post BVR transition to high-risk WVR environment from a detached (mutual support by presence) formation, defensive reactions, reforms/resets, disengagement/egress.

**3.4.7. A/G Training:**

**3.4.7.1. MQT-SAT--Mission Objectives.** Demonstrate proficiency in A/G employment. Specific Mission Tasks: Intel scenario and mission planning, opposed ingress, flow priorities and signature management, threat detection and reactions, first-run attacks, tactical sensors and weapons employment IAW squadron UCML, safe recovery procedures.

**3.4.7.2. MQT-Close Air Support (CAS)--Mission Objectives.** Demonstrate proficiency in A/G employment. Specific Mission Tasks: Ground liaison officer (GLO)/ Intel scenario and tactical mission planning, Engagement under the control of a Joint

Terminal Attack Controller (JTAC) or FAC(A), tactical sensors and weapons employment IAW squadron UCML.

3.4.7.3. **MQT-Night 4-Ship Employment-Mission Objectives.** Demonstrate proficiency in Unit specific missions.

3.4.7.4. **MQT-Suppression of Enemy Air Defense (SEAD)—Mission Objectives.** Demonstrate proficiency in A/G SEAD employment/force protection tactics in medium/low altitude and high/low threat environments. Practice Air-to-surface weapon employment to support a simulated/actual strike package time over target (TOT) window. Specific Mission Tasks: Force protect a simulated/ actual strike package (adversary air desired), coordinated four-ship medium/low altitude SEAD tactics, Air-to-surface weapon employment supporting a simulated/actual strike package TOT, and threat reactions.

3.4.7.5. **MQT-Mission Certification—Mission Objectives.** Demonstrate proficiency in Unit specific missions. This sortie will be flown by the SQ/CC or his designated IP or squadron supervisor.

**3.5. Initial Aircrew Chemical Defense Training (ACDT).** (N/A for CB/TF-coded and ANG ASA units) Designed to ensure pilot proficiency in the overall use of the Aircrew Chemical Defense Ensemble (ACDE) and to familiarize pilots with combat capabilities while wearing ACDE. Pilots must complete Initial ACDT NLT 90 days (ARC: 180 days) from MQT completion. Initial ACDT affects CMR/BMC, but is non-grounding. All initial ACDT is to be accomplished prior to the first ACDE flight. Pilots will be ACDE certified upon the completion of initial ACDT. Pilots who accomplished initial ACDT in previous tours in a fighter type MDS are not required to reaccomplish the ACDE Flight.

3.5.1. **Ground Training.** Pilots will accomplish initial ACDT (LL04) initial and CT refresher thereafter. Egress Training with ACDE (LL05) IAW AFI 11-301, *Aircrew Flight Equipment (AFE) Program*, and Emergency Parachute Training with ACDE IAW AFI 16-1301, *Survival, Evasion, Resistance, and Escape Program*, will be accomplished once in a career (per MDS).

3.5.2. **ACDE SIM.** A SIM mission in full ACDE gear (anti-exposure suit liner may be substituted), harness, and G-suit. Within the mission profile, practice doffing simulated contaminated equipment. An ACDE SIM mission may use existing SIM mission profiles and count toward TAC SIM training cycle requirements. Units will use their best available simulator or actual aircraft cockpit for ACDE SIM training. The ACDE SIM will be accomplished once in a career (per MDS), and should be conducted as close as possible to the day before (but not more than 30 days prior) to the ACDE flight.

3.5.3. **ACDE Flight.** The ACDE flight will be accomplished once in a career (unless previously accomplished in a fighter type MDS). Flight training must consider limitations of operating while wearing ACDE. Full donning and doffing procedures/sequence will be practiced in conjunction with the ACDE flight but the only ACDE worn in-flight will be mask, filter pack, and gloves.

3.5.4. ACDE Flight Restrictions:

- 3.5.4.1. Pilots will be fully current and qualified in an event prior to accomplishing that event on an ACDE flight.
- 3.5.4.2. Minimum formation spacing is route unless fingertip is required for safe mission accomplishment (i.e., weather (WX) penetration).
- 3.5.4.3. Minimum altitude is 500 feet AGL except takeoffs, approaches and landings.
- 3.5.4.4. No ACBT or night sorties. AAR requires an IP in the flight.
- 3.5.4.5. WX minimums are 1,500 feet ceiling and 3 miles (4.8 km) visibility
- 3.5.4.6. Operations will be supervised by an ACDE qualified FL from a chase position. Formations, to include chase, are limited to two-ship and only one pilot in the element will be wearing ACDE. Pilots wearing ACDE gear will not fly in dissimilar formations.
- 3.5.4.7. Operations supervision should not conduct ACDE flight training when, in their judgment, temperature/dew point conditions are not favorable to safe operations.

## Chapter 4

### CONTINUATION TRAINING (CT)

**4.1. General.** This chapter outlines ground and flying training requirements for CMR, BMC, and BAQ pilots. Pilots must be qualified IAW AFI 11-401, AFI 11-2F-35A-V2, and AFI 11-202 V1/V2. Additionally, they must complete IQT to fly in BAQ status, MQT or FTU IP upgrade to fly in BMC status, or MQT to fly in CMR status.

**4.2. Ground Training.** Ground training will be accomplished IAW the ground training table in the RTM. Waiver authority for the ground training specified is IAW the reference directive. Ground training accomplished during IQT/MQT may be credited toward CT requirements for the training cycle in which it was accomplished. This list is intended to be a single source reference for F-35 specific ground training only, which will be tracked in ARMS. This list does not include non-F-35A specific ancillary training (e.g. SABC, information assurance (IA) training) which should not be tracked ARMS. Where discrepancies exist, the reference directive takes precedence.

4.2.1. **Simulator (SIM):** The event requirements in the RTM depict the minimum EP and tactical (TAC) SIM training requirements to be accomplished in best available simulator. SQ/CC will determine the required supervision for CT SIM missions, based on SIM capabilities, and mission training objectives. Units will develop scenarios that cover both EP and TAC SIM missions based on expected employment tasking and general systems knowledge requirements. Emphasis should be placed on training not readily attainable during daily flying activities. Units will review scenarios each training cycle and update as required. Pilots may receive credit for training accomplished in special SIM devices or HHQ-directed simulator test support, etc., if approved by the SQ/CC.

4.2.1.1. During EP SIM missions, training in the following areas will be accomplished each training cycle: unusual attitude recoveries, spatial disorientation, inadvertent weather entry, controlled flight departure recognition and recovery procedures, controlled and uncontrolled ejection parameters, aircraft subsystem failure checklist procedures, relevant critical action procedures, and precision instrument procedures. **Note:** Pilots may satisfy EP SIM requirements by accomplishing or administering INSTM/QUAL EP Evaluations (EPEs).

4.2.1.2. During TAC SIM missions, training in the following areas will be accomplished each training cycle: Aerospace expeditionary forces (AEF) and DOC relevant simulated combat employment, threat recognition/reactions and counter tactics, aircraft subsystem failure checklist procedures, relevant critical action procedures. **Note:** Pilots may satisfy TAC SIM requirements by accomplishing or administering mission (MSN) EPEs.

4.2.2. Situational Emergency Procedures Training (SEPT).

4.2.2.1. This training is not an evaluation, but a review of abnormal/emergency procedures and aircraft systems operations/limitations during realistic scenarios. One pilot should present a situation and another discusses actions necessary to cope with the malfunction and carry it to a logical conclusion. All critical action procedures (CAP) and squadron special interest items will be accomplished during monthly SEPTs. Incorporate the following elements into squadron SEPT training programs:

- 4.2.2.1.1. SQ/CC/DO involvement in the selection of a monthly SEPT topic.
  - 4.2.2.1.2. Develop SEPT scenarios using actual mishaps/incidents as baseline cases.
  - 4.2.2.1.3. Discuss at least one EP for each major subsystem (engine, electrical, hydraulic, fuel, flight control and auxiliary power as applicable) in each session. The EPs should also span all phases of flight.
  - 4.2.2.1.4. Accomplish two SEPTs each training cycle with an IP or SQ supervisor to include minimum fuel and emergency divert training.
- 4.2.2.2. SEPT training will be accomplished each calendar month, and the currency will expire at the end of the following month. Pilots with an expired SEPT are grounded until subsequently completed.
- 4.2.2.3. SEPTs should be accomplished in the best available simulator. If a simulator is not available, SEPTs should be accomplished one-on-one or in small flight-sized groups as long as all members participate fully and share equal time responding to emergency situations.
- 4.2.2.4. Completion of a simulator EP profile satisfies the monthly SEPT requirement. For an IP/FE administering the SEPT/EP SIM, this will satisfy their SEPT requirement.
- 4.2.2.5. Formal course student SEPTs may satisfy the monthly SEPT requirement for the IP whom administers this training.
- 4.2.3. Weapons/Tactics Academic Training.** Units will establish a weapons/tactics academic training program to satisfy MQT and CT requirements. Training is required in each training cycle. Audio-visual programs may be used in place of academic instruction. The program will require successful completion of an examination (85 percent minimum to pass). Use testing to validate qualification to the maximum extent possible throughout the training program.
- 4.2.3.1. Academic instructors should be USAFWS graduates or have attended the applicable academic portion(s) of school, if possible.
  - 4.2.3.2. Instruction and tests should include (as applicable), but are not limited to:
    - 4.2.3.2.1. A/A and A/G weapons description, operation, parameters, fusing, limitations, preflight, tactics, normal and emergency procedures/techniques.
    - 4.2.3.2.2. ACBT. Principles of aerodynamics, maneuverability, AHC, formations, signature management, flow priorities, tactical intercept principles, visual merge mechanics and execution, alert procedures and scrambles, use of Ground controlled intercept (GCI)/Airborne warning control system (AWACS), and enemy capabilities.
    - 4.2.3.2.3. Electronic combat (EC) equipment, capabilities, operation, checks, procedures, infrared missile defense (IRMD)/radar missile defense (RMD), countermeasures, and hostile electronic warfare (EW) tactics.
    - 4.2.3.2.4. Specialized training to support specific weapons, tactics (to include threat visual identification (VID) tactics), mission capabilities, authentication, wartime rules of engagement (ROE), and safe passage.

4.2.3.2.5. Low altitude flying academics review IAW the outline in paragraph **6.11.6**, LASDT Ground Training.

#### 4.2.4. **Verification:**

4.2.4.1. Continuation verification updates pilots on their squadron's wartime mission. Each pilot will participate in a squadron initial/CT verification as a briefer, board member, or seminar participant. Pilots who participate in a unit deployment to a tasked AOR may receive credit for continuation verification.

4.2.4.1.1. In CC-coded units, BMC pilots should accomplish an initial verification and/or participate in a CT verification to facilitate future upgrade to CMR status, at the discretion of the SQ/CC.

**4.3. Flying Training.** All pilots will accomplish the mission and event requirements listed in the most current RTM. Failure to accomplish these requirements may not affect BAQ, BMC, or CMR status but may require additional training as determined by the SQ/CC. In addition, the following are required:

#### 4.3.1. Basic Aircraft Qualification (BAQ) Requirements:

4.3.1.1. Instrument Qualification Evaluation IAW AFI 11-202V2.

4.3.1.2. Currencies (as applicable) IAW paragraph **4.6**

4.3.1.3. BAQ pilots will fly a supervised sortie (squadron supervisor or IP) at least once every 60 calendar days. In addition, if a BAQ pilot does not fly for 21 days (inexperienced) or 30 days (experienced), the next sortie must be flown with a squadron supervisor or an IP.

4.3.1.4. BAQ pilots that remain in BAQ status for more than 6 months will be grounded (except General Officers), unless currently enrolled in a program to achieve CMR/BMC (waiver authority: MAJCOM/A3).

#### 4.3.2. Basic Mission Capable (BMC) Requirements:

4.3.2.1. Instrument, qualification, and Mission Evaluations IAW AFI 11-202V2.

4.3.2.2. Currencies (as applicable) IAW paragraph **4.6**

4.3.2.3. Ground training requirements related to applicable RAP missions/events.

4.3.2.4. Sortie rate (lookback) IAW MAJCOM guidance.

4.3.2.5. RAP sorties, mission types, and events, including weapons qualifications IAW the procedures set forth in this volume and the RTM.

4.3.2.6. LASDT Category I certification.

#### 4.3.3. Combat Mission Ready (CMR) Requirements:

4.3.3.1. Performance satisfactory to the SQ/CC.

4.3.3.2. Mission Evaluation IAW AFI 11-202V2.

4.3.3.3. Sortie rate (lookback) IAW **Table 4.1** and paragraph **4.7.1**

4.3.3.4. RAP sorties, mission types, and events, including weapons qualifications IAW the procedures set forth in this volume and the MAJCOM RAP tasking message.

4.3.3.5. Currencies (as applicable) IAW paragraph 4.6

4.3.3.6. LASDT Category I certification.

4.3.3.7. Ground Training IAW this volume and the RTM.

4.3.3.8. Verification IAW paragraph 4.2.4

#### 4.3.4. Special Capabilities/Qualification Requirements:

4.3.4.1. Specialized training IAW **Chapter 6** or locally directed syllabi.

4.3.4.2. Mission/event requirements IAW the RAP tasking message.

4.3.4.3. Failure to accomplish the requirements specified in this document or the RAP tasking message requires recertification IAW paragraph 4.8.3

#### 4.3.5. **Special Unit Requirements.** This paragraph applies to TF-coded and CB-coded aircraft units.

4.3.5.1. MAJCOMs will define requirements for API-1/6 pilots assigned or attached to TF/CB-coded units in the RTM. MAJCOMs will determine missions and approved test plan missions apply to the BMC rate requirement.

4.3.5.2. For CB-coded units, SQ/CCs may designate IPs as initial cadre to instruct new events under an approved test plan.

4.3.5.3. **Ground Training.** SQ/CCs will direct additional ground training necessary to accomplish special unit requirements, such as IP phase briefings and test preparation.

4.3.5.4. **Flying Training.** SQ/CCs will direct additional sorties if syllabus or test missions provide insufficient pilot proficiency training.

4.3.5.5. For United States Air Force Air Warfare Center (USAFAWC) and United States Air Force Weapons Test Center (USAFWTC) pilots, night flying and AAR events are only required to meet syllabus or program requirements.

4.3.5.6. Pilots assigned/attached to USAFWC, 422 TES, 85 TES, and 86 FWS will maintain appropriate WD currencies, and at the unit CC's discretion, may fly in the RCP of aircraft participating in A/G WSEP. 83 FWS pilots will maintain ACBT currency and, at the 83 FW/CC's discretion, may fly in the RCP of aircraft participating in A/A WSEP.

#### 4.4. **Special Categories:**

4.4.1. MAJCOM and NAF API-8 Pilots and MAJCOM/IGS Flying Inspectors. (ANG: Responsibilities for API -8 staff flyers are contained in AFI 11-401 as supplemented by the ANG).

4.4.1.1. Mission Directed Training (MDT) for HHQ personnel (other than that conducted in support of a formal inspection) requires coordination with the supporting unit. MAJCOM division chiefs are the reviewing authority for assigned personnel. They will:

4.4.1.1.1. Coordinate with the supporting agency to ensure appropriate ARMS data is maintained and provided IAW AFI 11-401.

4.4.1.1.2. Review assigned pilot accomplishments and currencies prior to authorizing pilots to participate in MDT.

4.4.1.2. HHQ flying personnel maintaining BMC status are exempt from non-grounding academic ground training, Night-AAR (NAAR), CST, ACDE training, and special training programs within authorized mission areas. Specific currencies will be provided to the host squadron and HHQ supervisors will determine pilot qualifications to participate in squadron scenarios for MDT.

4.4.1.3. HHQ pilots will:

4.4.1.3.1. Review accomplishments and currencies for accuracy.

4.4.1.3.2. Submit qualification/authorization documentation to the supporting SQ/CC, DO or authorized representative prior to flying with that squadron.

4.4.1.4. IPs may perform instructor duties with the concurrence of the OG/CC, if qualified and current for the applicable missions/events.

4.4.2. Active Duty Pilots Flying with ANG or AFRC Units:

4.4.2.1. Wing/group air advisor rated personnel on duty with operational training units can maintain CMR/instructor status, as appropriate, and may be qualified as an FE.

4.4.2.2. MAJCOM pilots may fly with other MAJCOM units IAW AFI 11-401.

4.4.2.3. Pilots on exchange programs from active duty units are authorized mission oriented sorties IAW the specific guidance that establishes the exchange. Squadron commanders may authorize their participation IAW their specific experience and qualification.

4.4.2.4. HHQ staff pilots may participate in tactical training events. Each pilot will present documentation summarizing currencies, egress training, flight qualifications, etc., to the unit where flying is performed.

**4.5. Multiple Qualification/Currency:** Paragraph 4.5 does not apply to variants of the F-35A. These aircraft are considered the same MDS. See paragraph **6.10** for block differences training.

4.5.1. Multiple qualification is authorized according to AFI 11-202V1.

4.5.1.1. Submit multiple qualification requests through command channels to MAJCOM/A3 (ANG: NGB/A3). All requests must contain full justification. Approval for a multiple qualification request must be provided to the appropriate host installation aviation management office.

4.5.1.2. Individually authorized multiple qualifications are valid as long as the individual is assigned to the specific position, and aircraft requested, or until rescinded by the approval authority.

4.5.2. **Multiple Requirements.** Multiple qualified pilots will complete all of the requirements and maintain all of the currencies required by this chapter.

4.5.3. **Multiple Currencies.** Pilots will fly at the rate necessary to comply with all other currency requirements for each aircraft.

4.5.4. Pilots must complete conversion training IAW an approved syllabus.



**4.6. Currencies/Recurrencies/Requalifications:**

4.6.1. **Currency.** **Table 4.1**, as supplemented by the most current RTM, defines currency requirements for all F-35A pilots. If a pilot loses a particular currency, that sortie/event may not be performed except for the purpose of regaining currency as noted.

**Table 4.1. F-35A Pilot Currencies.**

<b>EVENT</b>	<b>To update fly:</b>	<b>INEXP</b>	<b>EXP</b>	<b>Affects CMR</b>	<b>To regain currency:</b>	<b>NOTES</b>
DEMANDING SORTIE	Any Sortie	21	30	NO	Non-demanding mission	1, 10
LANDING	Landing	30	45	NO	Landing, Ref <b>4.6.3.</b>	2, 10
NIGHT LANDING	Day or night Landing	21	30	NO	Day landing, Ref <b>4.6.3.</b>	
SFO	Event or Sim Event	60	90	NO	Event	3, 15
ACBT	ACBT	60	90	YES	ACBT, Ref <b>4.6.4.</b>	3, 4
RANGE	Event	120	180	NO	Event	3, 5
LOWAT	Low A/A or Low A/G Event	60	90	NO	LOW A/A or Low A/G Event	3, 4, 6
AAR	Day or Night AAR	180	180	YES	Event	3
PRECISION APPROACH	Event or Sim Event	30	45	NO	Event	7, 15
Element A/A Maneuvers	Event	60	90	NO	Event	3, 4, 8
INSTRUCTOR	Event or Sim Event	N/A	90	NO	Event, Ref <b>4.6.5.</b>	9, 15
DAS / NVC	Event or Sim Event	120	180	NO	DAS/NVC Re-currency mission IAW para <b>4.6.6.</b>	9, 10, 15

DAS/NVC LOW (N/A ANG)	Event	60	90	NO	DAS/NVC LOW ALT Fam	3, 11
FCF Profile	Event or FCF Sim	N/A	90	NO	Event or FCF Sim	12, 15
AIR STRIKE CONTROL (ASC)	Event	60	90	NO	Event, Ref <b>4.6.7.</b>	13

**Notes:**

1. See **Attachment 2** for demanding/non-demanding sortie definitions. In addition, BAQ pilots will fly in a supervised status (with a FL-qualified SQ supervisor or IP) any time a non-demanding sortie is required.
2. Recurrency supervision level is IP in chase, qualified and current in event.
3. Supervision will be FL-qualified SQ supervisor or instructor, qualified and current in the event/capability.
4. For formal course IP's (Weapons instructor course (WIC) and FTU), CT and exercise participation require above currencies; formal syllabus training missions require 180 days currency.
5. Updated by an actual weapons release on a class A/B/C range.
6. Currency is required in the pilot's low altitude category for operations below 1000 feet (**Table 6.1.**). Loss of currency requires regression to the next higher altitude block. Operations in a lower block will update the higher block categories. Re-currency requires satisfactory performance in the following events: vertical awareness training, hard turns, tactical formation, and offensive/defensive maneuvering.
7. If non-current in precision approaches, increase the pilot weather minimum by one category. To regain currency, fly a precision approach. Any simulator may be used to update currency (but not to regain currency) provided simulator training is accomplished with WX at/below pilot minimums. Multiple simulator approaches are desired. FL-qualified Squadron Supervisor or IP may accomplish.
8. Element A/A currency. Currency is updated by accomplishing an A/A event with emphasis on blue element employment contracts and deconfliction. Does not affect CMR. If non-current, must accomplish a day event. Opposed A/G sorties that fit the definition in **A2.1.24.** may update this currency, IP required.
9. For IPs, accomplishing or instructing the event will update currency. WIC student sorties count as instructor sorties.
10. Must be current in distributed aperture system (DAS) Refresher Academics. Supervision will be an DAS current, FL-qualified SQ supervisor or IP in the element.
11. Currency is required in DAS LOW to fly in the night low altitude environment (IAW AFI 11-214, *Air Operations Rules and Procedures*). Loss of currency will require re-accomplishment of single ship low altitude familiarization (IP/SQ supervisor chased) IAW para **6.7.6.8.**
12. Supervision for flight or simulator will be a current and qualified FCF pilot.
13. FAC(A)s will perform two controls to update air strike control (ASC) currency, IAW the current

Joint Close Air Support (JCAS) FAC(A) memorandum of agreement (MOA). No more than two controls may be counted per CAS target or 9-line briefing. FAC(A)s will satisfy ASC currency and event requirements by training with actual fighters and TACPs to the maximum extent possible. Failing to meet either proficiency or currency will result in FAC(A) pilots being non-qualified.

14. For units with an MRT/FMS, this currency may be updated in the simulator as part of a tactical/EP sim profile.

15. For units with any type of simulator (MRT, FMS), this currency may be updated as part of a tactical/EP SIM profile.

4.6.2. **Recurrency.** Pilots require additional training if a currency requirement is not met.

4.6.2.1. Pilots must accomplish overdue training requirements as specified by the SQ/CC before they are considered requalified to perform the task. Training annotated as affecting CMR status will require regression to N-CMR until the pilot accomplishes the training. Training identified as not affecting CMR status does not require regression from CMR; however, it may result in additional training and increased supervision until the training is completed. The duration of supervised status and of sortie lookback will determine the effect on CMR status.

4.6.2.2. Unless otherwise specified, supervisory requirements pertaining to recurrency may be satisfied in the flight position that offers the best control of the mission, as determined by the SQ/CC.

4.6.3. **Landing Recurrency.** Loss of landing currency requires the following action (timing starts from date of last landing):

4.6.3.1. **31-90 Days (46-90 Days--Experienced).** Regain landing currency.

4.6.3.2. **91-135 Days.** Same as [4.6.3.1](#), plus instructor supervised SIM (tactics, normal and emergency procedures for CMR pilots; normal, instrument, and emergency procedures for BAQ and BMC pilots).

4.6.3.3. **136-210 Days (136-225 for experienced).** Same as [4.6.3.2](#), plus closed and open book qualification examinations, EPE, and CAPs written examination.

4.6.3.4. **211 (226 for experienced) or More Days.** IQT, including a re-qualification evaluation.

4.6.4. **ACBT Recurrency.** Pilots losing currency in ACBT must accomplish the following sorties:

4.6.4.1. **61-90 Days (91-120 Experienced).** BFM (offensive and/or defensive).

4.6.4.2. **91-180 Days (121-180 Experienced).** AHC (One Vertical Recovery, one event from the HARTS series IAW AFTTP 3-3) and BFM (offensive and/or defensive).

4.6.4.3. **Over 180 Days.** Accomplish a SQ/CC tailored program IAW paragraph [3.4.5](#)

4.6.5. **Loss of/Requalification to IP Status.** IPs will be decertified for:

4.6.5.1. Failure of a flight evaluation or a commander directed downgrade. To regain IP status, the IP must successfully complete a flight check IAW AFI 11-202V2.

4.6.5.2. Failure of an INST/QUAL open book test. To regain IP status, the IP must successfully reaccomplish the written exam.

4.6.5.3. Expiration of instructor currency. 91-180 days requires an instructor recurrency flight with an IP. Over 180 days requires a Stan/Eval flight evaluation IAW 11-2F-35A-V2. WIC student sorties count as instructor sorties for currency.

4.6.5.4. Loss of CMR status due to loss of currency in an event/sortie and the SQ/CC deems decertification is required. If the SQ/CC does not elect this option or if the instructor becomes noncurrent in events/sorties which do not require removal from CMR status, instructor status may be retained, but the IP will not instruct in that event/sortie until the required currency is regained.

4.6.6. **DAS Re-currency Mission.** Pilots losing DAS/NVC currency must accomplish the following events prior to unrestricted night operations:

4.6.6.1. 2-ship basic formation work / light drills and unit specific mission elements.

4.6.6.2. Tactical turns and maneuvers.

4.6.6.3. Minimum of one of the following night profiles/sorties:

4.6.6.3.1. Intercept DAS-TI profile not to exceed 2v2, above 5,000 feet AGL or MSA whichever is higher, or

4.6.6.3.2. BSA above 4,500 feet AGL or MSA whichever is higher, or

4.6.6.3.3. Unopposed surface attack tactics (SAT)/SEAD above 4,500 feet AGL or MSA whichever is higher.

4.6.7. **ASC Currency.** Air strike control events only apply to FAC(A) qualified pilots and are IAW JCAS FAC(A) MOA (dated 1 Dec 07). Track each ASC performed by type as applicable for JCAS FAC(A) MOA documentation requirements. This currency only updates when FAC(A) qualified pilots act as the FAC(A) element lead. FAC(A)s will satisfy their requirements with ground units or TACPs whenever possible.

4.6.8. MAJCOM/air operations squadron (AOS) currency requirements. Units will comply with AFI 11-207, *Combat Aircraft Delivery*, for additional currencies required for the flight delivery of aircraft coordinated through any AOS.

#### 4.7. Regression (N/A to CB/TF-coded units):

4.7.1. **CMR/BMC Regression for Failure to Meet Lookback.** Only RAP training and Contingency Operations sorties may be used for lookback. If a pilot does not meet monthly lookback requirements throughout the training cycle, SQ/CCs can either: Regress the pilot to N-CMR/N-BMC, as applicable; remove the pilot from a CMR/BMC manning position; or initiate action to remove the pilot from active flying status.

4.7.1.1. Failure to meet 1-month RAP/Contingency Operations sortie lookback requires a review of the pilot's 3-month sortie history. If the 3-month lookback has been met, pilots may, at SQ/CC discretion, remain CMR/BMC. Failure to meet the 3-month lookback will result in regression to N-CMR/N-BMC status as appropriate, or the pilot may be placed in probation status for one month at the squadron commander's discretion. If probation is chosen, the only way to remove a pilot from probation and preserve the current status is

to reestablish a 1-month lookback at the end of the probation period. Probation should not be used to disguise extended shortfalls in sorties that would result in underperforming the training cycle totals. Probation should be used sparingly.

4.7.1.2. CMR/BMC pilots regressed to N-CMR/N-BMC for lookback, must complete a SQ/CC approved re-certification program to return the pilot to CMR/BMC standards. Upon completion of the re-certification program, the CMR/BMC pilots must also meet 1-month lookback requirement prior to reclaiming CMR/BMC status. The sorties and events accomplished during the re-certification program may be credited towards their total/type sortie and event requirements for the training cycle as well as for their monthly sortie requirement.

4.7.1.3. Lookback computations begin following completion of MQT. The pilot must maintain 1-month lookback until 3-month lookback is established. SQ/CCs may apply probation rules as described in paragraph 4.7.1.1 if a new CMR/BMC pilot fails to meet 1-month lookback while establishing 3-month lookback. In addition, 1-month lookback will start the first full month of CMR/BMC status.

4.7.2. **Regression for Weapons Qualification.** Failure to maintain RAP tasked weapons qualification at the end of the training cycle may require regression to N-CMR/N-BMC. Refer to section 5.3.3 for requalification.

4.7.3. **Regression for Evaluation.** Pilots who fail an aircraft qualification, mission, or instrument evaluation will be handled IAW AFI 11-202V2. Pilots will regress to N-CMR, N-BMC, or N-BAQ as applicable. These pilots will remain N-CMR/N-BMC/N-BAQ until successfully completing required corrective action, a reevaluation, and are recertified by the SQ/CC.

**4.8. End of Cycle Requirements.** Pilots who fail to complete mission and/or event requirements of this instruction at the end of the training cycle may require additional training depending on the type and magnitude of the deficiency. Refer to paragraph 4.9 to see if some of these requirements can be prorated. In all cases, report training shortfalls IAW paragraph 1.2.5.10 Note: N/A for CB/TF coded units.

4.8.1. Pilots failing to meet total training cycle RAP mission requirements may continue CT at CMR/BMC as determined by lookback. The SQ/CC will determine if additional training is required.

4.8.2. Pilots failing to meet RAP mission type requirements will result in one of the following:

4.8.2.1. Regress to N-CMR/N-BMC if SQ/CC determines the mission type deficiency is significant. To regain CMR/BMC the pilot must complete all deficient sortie types. These sorties may count towards total requirements for the new training cycle.

4.8.2.2. Continue at CMR/BMC if total RAP sorties and lookback are maintained and the sortie type deficiencies are deemed insignificant by the SQ/CC.

4.8.3. Pilots failing to accomplish sorties required for Special Capabilities/Qualifications will lose their qualification. The SQ/CC will determine requalification requirements.

**4.9. Proration of End-of-Cycle Requirements.** At the end of the training cycle, the SQ/CC may prorate all training requirements when DNIFs, emergency leaves, Consecutive Overseas

Tour (COT) leaves, non-flying temporary duty (TDY)/exercises combat/contingency deployments, (ANG: and or mandatory training required by civilian employment), preclude training for a portion of the training period. Use [Table 4.2](#) to determine proration. Normal leave will not be considered as non-availability. Extended bad weather, which precludes the unit from flying for more than 15 consecutive days may be considered as non-availability. (ANG: End-of-cycle proration is permitted for documented attrition (e.g. HHQ or weather cancels, MNDs, ground or air aborts) in monthly increments when the total number of occurrences ranges from one half to one times the individual's normal monthly rate of flying). The following guidelines apply:

**Table 4.2. Proration Allowance.**

<b>CUMULATIVE DAYS OF NON-FLYING</b>	<b>MONTHS OF PRORATION ALLOWED</b>
0 – 15	0
16 – 45	1
46 – 75	2
76 – 105	3
106 – 135	4
136 – 165	5
166 – 195	6
196 – 225	7
226 – 255	8
256 – 285	9
286 – 315	10
316 – 345	11
Over 345	12

4.9.1. Proration will only be used to adjust for genuine circumstances of training non-availability and not to mask maintenance, flying hour program (FHP) execution, training or planning deficiencies.

4.9.2. Proration is based on cumulative days of non-availability for flying in the training cycle. Use [Table 4.2.](#) to determine the number of months to be prorated based on the

cumulative number of calendar days the pilot was not available for flying during the training cycle.

4.9.3. If IQT or MQT is reaccomplished a pilot's training cycle will start over at a prorated share following completion of IQT/MQT training.

4.9.4. **Example:** Capt Jones was granted 17 days of emergency leave in January and attended SOS in residence from March through April for 56 consecutive calendar days. His SQ/CC authorized a total of two months proration from his training cycle (two months for the 73 cumulative days of non-availability for flying). (ANG: Maj Smith is an experienced CMR pilot with a normal monthly requirement of 6 sorties. He had eight attrition occurrences throughout the training cycle; therefore his SQ/CC can prorate one month of Maj Smith's training requirements).

4.9.5. Prorated numbers resulting in fractions of less than 0.5 will be rounded to the next lower whole number; however, no requirement may be prorated below one.

4.9.6. Newly assigned/converted pilots and pilots achieving CMR/BMC after the 15th of the month are considered to be in CT on the first day of the following month for proration purposes. A prorated share of RAP sorties must be completed in CT.

4.9.7. Night and AAR requirements accomplished during MQT may be credited toward prorated CT requirements if accomplished during the cycle in which the pilot was declared CMR/BMC unless specified otherwise by MAJCOM.

4.9.8. A pilot's last month on station prior to departing permanent change of station (PCS) may be prorated provided 1 month's proration is not exceeded. Individuals departing PCS may be considered CMR for reporting purposes until loss of CMR currency, port call date, or sign in at new duty station, whichever occurs first.

4.9.9. CMR pilots who attend USAFWS in TDY-and-return status may be reported throughout the TDY as CMR. Upon return, those pilots will accomplish a prorated share of sortie/ event requirements (see [Table 4.2](#)).

4.9.10. **Contingency Operations.** Contingency operations can have a positive or negative impact on a unit's CT program, as emphasis is on supporting the actual contingency. A potential lack of training opportunities while supporting contingency operations can place a burden on the unit, forcing it to accomplish the majority of its CT program in a reduced period of time or with reduced assets. The following proration procedures are intended to provide flexibility in accomplishing the unit's CT program.

4.9.10.1. Missions flown during contingency operations will be logged as such. These missions do not count toward RAP requirements, but may be used for lookback purposes. Except AAR, RAP events may be used to update currencies but do not count toward training cycle requirements. Units will prorate RAP missions and events upon returning from contingency operations for the period of time each individual was deployed. Proration is also authorized for deployment preparation and reconstitution where home station flying is reduced by the MAJCOM. (ANG/AFRC: individuals deployed for more than a seven-day period may prorate a one-month portion of RAP missions and events.)

4.9.10.2. As the training quality of missions flown at contingency locations may vary considerably, OG/CCs are authorized to allow sorties that provided valid training to be

logged as RAP sorties. Events accomplished on these sorties count toward RAP event requirements, and these sorties/events may not be prorated.

4.9.10.3. Upon return from contingency operations, units will prorate the sorties for the entire deployment, subtracted by the number of valid OG/CC-authorized RAP missions. The result is the allowable sortie proration. SQ/CCs will prorate based on the events accomplished during valid RAP missions. In all cases, negative numbers equate to zero.

#### **4.10. Regaining CMR/BMC Status:**

4.10.1. If CMR/BMC status is lost due to failure to meet the end of cycle weapons qualifications and/or event requirements, requalification is IAW paragraph [5.3.3](#)

4.10.2. If CMR/BMC status is lost due to failure to meet lookback IAW paragraph [4.7.1](#), the following applies (timing starts from the date the pilot came off CMR/BMC status):

4.10.2.1. **Up to 90 Days.** The pilot must complete SQ/CC directed re-certification program in accordance with paragraph [4.7.1.2](#) In addition, all RAP event currencies must be regained. The SQ/CC will approve any other additional training prior to re-certification to CMR.

4.10.2.2. **91-180 Days.** Same as above, plus Stan/Eval generated open and closed book written examinations.

4.10.2.3. **181 Days and Beyond:** Reaccomplish MQT.

#### **4.11. Example of the Lookback, Regression, Proration, and Requalification Process:**

4.11.1. Capt Smith is an experienced CMR pilot in ACC with a 1 and 3 month lookback requirement of 9 and 27 RAP missions respectively. On 3 Feb, he flew an ACBT sortie prior to departing for a non-flying TDY for two months. He reported back for flight duty on 6 Apr. What is his status throughout his TDY and on his return?

4.11.1.1. The SQ/CC wanted to list Capt Smith as a countable CMR pilot for reporting purposes throughout the TDY. Therefore, on 1 Mar, his Flt/CC performed the mandatory 1-month lookback (Feb) on Capt Smith. He only flew one RAP sortie, failing the 1-month lookback. The Flt/CC then performed a 3-month lookback (Dec, Jan, Feb). This showed that he flew only 24 sorties for this period. Had he flown three more sorties, his SQ/CC could continue Capt Smith at CMR. With 24 sorties, Capt Smith did not meet the 3-month lookback for a CMR pilot. The SQ/CC could regress Capt Smith to N-CMR, but instead elected to put him on probation, still carrying him as CMR.

4.11.1.2. The SQ/CC decided to carry Capt Smith on probation for one month. On 1 Apr, Capt Smith's 1 month lookback (Mar) was 0 sorties. The SQ/CC must now regress Capt Smith to N-CMR. When Capt Smith returns, the SQ/CC will have to place him in a re-certification program. Upon completing this program, Capt Smith will need to re-establish his 1-month lookback by 1 May. Failing to do so would force him to be reported N-CMR one more month until the next lookback process on 1 June.

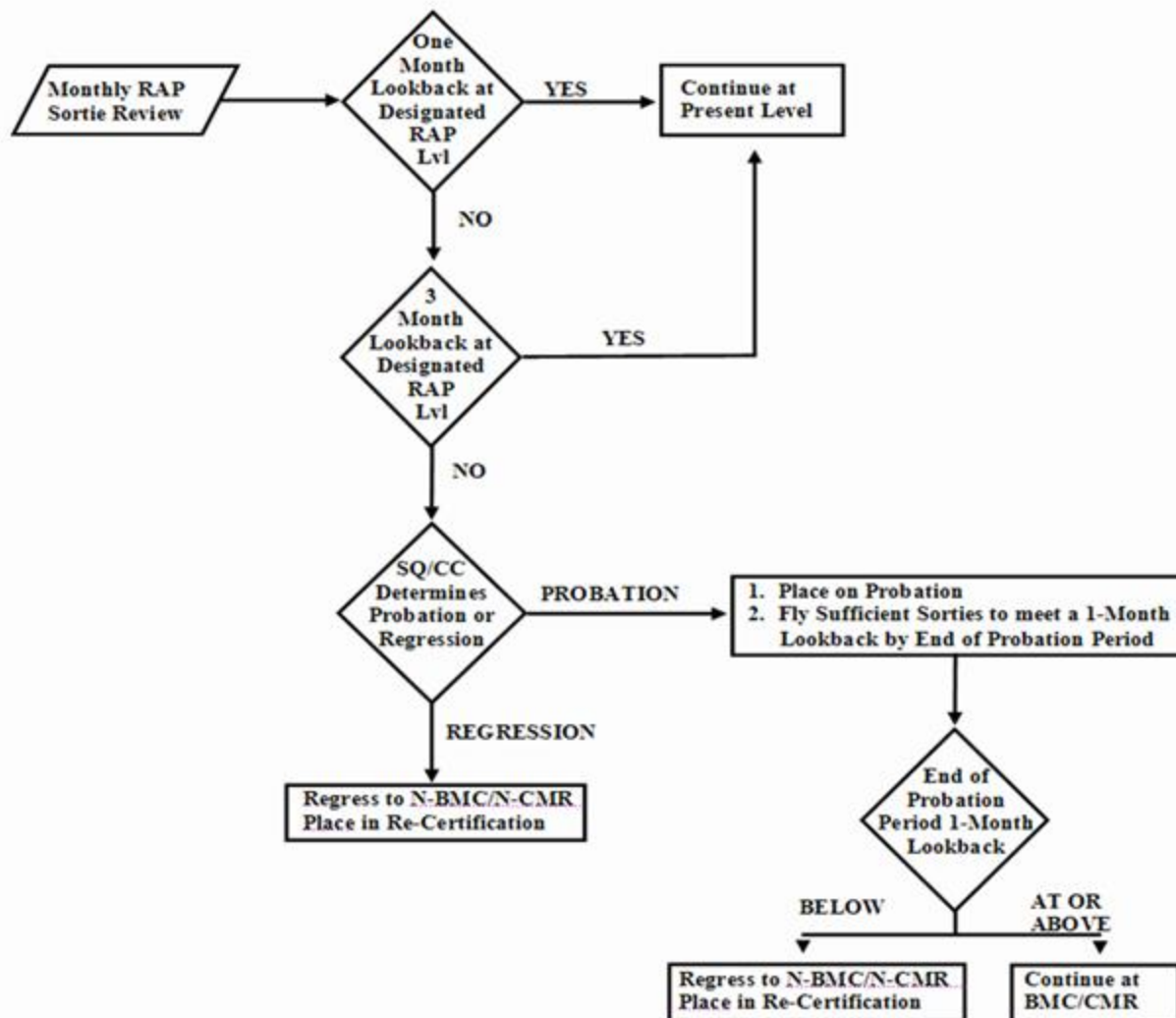
4.11.1.3. If he had returned on 22 Mar, and had last landed the jet 48 days ago, he could fly a non-demanding sortie to regain demanding sortie and landing currency. For CMR purposes, Capt Smith would need to complete 9 RAP missions to recapture his 1-month lookback and get off probation. Although Capt Smith was still CMR in Mar, the SQ/CC



flew him with an IP on his first few sorties to regain his landing, AAR, low altitude training (LOWAT), and formation take-off (T/O) and landing currencies.

4.11.1.4. At the end of the training cycle on 30 Jun, the SQ/CC prorated 2 months off of Capt Smith's total requirements. In spite of this proration, Capt Smith was deficient in one mission category. The SQ/CC could regress Capt Smith to N-CMR if deemed significant. After accomplishing the tailored recertification program (in this case, the deficient sorties), the SQ/CC would recertify Capt Smith to CMR. This training counts for the new training cycle.

**Figure 4.1. Regression Flow Chart.**



## 4.12. Instrument Training.

4.12.1. An instrument training program will be developed IAW AFMAN 11-210, *Instrument Refresher Program (IRP)*.

4.12.2. Units which seldom encounter bad weather and/or night recoveries should exercise pilots and approach facilities by periodically simulating "weather day" recovery operations, as determined by the SQ/CC.

4.12.3. Pilots transferring from another MAJCOM require the theater-specific portions of the instrument refresher course (IRC) before flying without a theater-experienced pilot in the formation. MQT academics and the MQT LAO mission may satisfy this requirement.

4.12.4. RAP events may be accomplished on an instrument mission provided accomplishment does not interfere with the primary goal of instrument training. The transition from instruments to visual references should be practiced on all instrument approaches. An instrument sortie is a basic skills requirement and may be credited toward monthly RAP lookback only IAW the RTM.

**4.13. G-Awareness Continuation Training.** Units will develop a CT program that provides feedback to pilots and imprints a proper L-1 Anti G Straining Maneuver (AGSM) so that it becomes an integral part of pulling Gs.

4.13.1. The basis of this program is to give each FL, SQ supervisor, flight surgeon and, if available, aerospace physiologist the skills needed to evaluate a flight member's portable memory device (PMD) to ensure a proper AGSM is being performed. This program also makes assessment of the AGSM a normal debrief item after every flight. The assessment should be done as a normal part of PMD assessment while reviewing other tactical portions of the mission.

4.13.2. Use the following minimum guidance to implement the unit's program:

4.13.2.1. AGSM technique and assessment will be incorporated into the squadron CT program. Emphasis will be placed on briefing, debriefing, and assessing the L-1 AGSM using the PMD in the debrief on a daily basis. FLs, IPs, SQ supervisors, and flight surgeons should become adept at assessing and teaching the correct AGSM. Academics will include a discussion of the limitations imposed on aircraft performance as a result of an ineffective AGSM.

4.13.2.2. The G-awareness exercise will be flown IAW the guidance in AFI 11-2F-35A, Volume 3, *Operations Procedures*.

4.13.2.3. FLs will assess the AGSM effectiveness of flight members during mission debriefings. This assessment should not be limited to the G-awareness exercise. Evaluate the AGSM after the pilot has had the time to fatigue to get an accurate assessment of a pilot's AGSM during a tactically and G-demanding portion of flight. AGSM should also be evaluated under relatively low intensity G such as A/G sorties.

4.13.2.4. An A/A mission PMD for each pilot will be reviewed each training cycle by the squadron flight surgeon, aerospace physiologist, or a squadron supervisor. The reviews will be documented.

4.13.3. FLs or SQ supervisors will identify pilots having poor AGSM technique or low G-tolerance to the Flt/CC or appropriate operations supervisor. The SQ/DO or appropriate operations supervisor will determine what action is required to improve the pilot's G-tolerance. The SQ/CC will determine if refresher training is required IAW AFI 11-404, *Centrifuge Training for High-G Aircrew*.

**4.14. Low/Slow Speed Electronic Identification (EID)/VID Procedures:**

4.14.1. For units specifically tasked to perform the Homeland Security mission or counter drug role, comply with current approved guidance.

4.14.2. For all other units, the objective of this low/slow EID/VID training is to expose pilots to problems associated with intercepting low/slow flying aircraft (rotary and fixed wing) for visual identification practice in a threat environment. Emphasis should be placed on dissimilar adversaries below 2000 feet AGL and 200 Knots indicated airspeed (KIAS) (helicopters are desired). Training will be conducted IAW AFTTP 3-1, *Mission Employment Tactics*, AFI 11-2F-35A-V3, and AFI 11-214.

4.14.2.1. Unit developed ground training programs will be designed for unit specific equipment and employment taskings. Academic sessions should be conducted during weapons and tactics training and maximum use of the visual recognition program is encouraged.

4.14.2.2. Flying training missions should, to the maximum extent possible, include USAF helicopters, United State Navy (USN) helicopters, United States Army (USA) helicopters, and propeller aircraft. Creation of a realistic environment to stimulate the aircraft EID/VID suite is essential to the conduct of low/slow VID procedures. Units must make every effort to maximize effective use of limited assets as well as to instill awareness and actions appropriate to this training. SQ/CC's will determine the depth of ground and flying training necessary prior to participating in exercises and contingency operations.

## Chapter 5

### WEAPONS EMPLOYMENT QUALIFICATION

**5.1. General.** This chapter outlines requirements for attaining initial qualification and maintaining CT qualification in the employment of A/G and A/A weapons. Refer to “Glossary of Missions/Sorties/Events” at [Attachment 2](#) for further guidance on weapons qualifications.

**5.2. Initial qualification (QUAL):** Pilots must attain initial qualification in any weapon or weapon category listed as QUAL in the RAP Tasking memo. Initial qualification can be attained in IQT or MQT, and may be credited toward CT qualification requirements.

5.2.1. Initial qualification and requalification in a weapon or weapon category is satisfied when the pilot has achieved a minimum of 3 hits out of 6 consecutive employment attempts. Initial qualification will carry over for consecutive F-35A assignments.

**5.3. CT qualification (QUAL):** Pilots must maintain qualification in any weapon or weapon category listed as QUAL in the RAP Tasking memo. These criteria establish the minimum standards for a pilot to maintain qualification and do not necessarily determine evaluation criteria established by other instructions or agencies (e.g., inspection/evaluation teams).

5.3.1. CT weapons employment will be from tactical deliveries or intercepts simulating realistic employment of UCML munitions, and IAW all appropriate guidance. To maintain a combat perspective during training, CT A/G weapons employment qualification requirements will be accomplished using full scale live/inert munitions and Standard Conventional Loads (SCLs) to the maximum extent possible. To achieve this, units should schedule full scale live/inert munitions such that every CMR pilot and the maximum number of aircraft have the opportunity to expend.

5.3.2. QUAL for A/G weapons requires a hit rate of 50 percent when compared to total employment attempts. QUAL for A/A weapons requires a 75% hit rate (valid at pickle/trigger squeeze) when compared to total employment attempts. Hit criteria is IAW AFTTP 3-1 and/or this Volume, as applicable. The RAP Tasking memo further defines QUAL requirements based on the training cycle.

5.3.2.1. PMD assessment. 100% of guided A/G and A/A weapons employment qualification requirements may be PMD assessed. Strafe events require actual weapons employment.

5.3.2.2. At the end of the training cycle, each pilot’s weapons employment statistics (hit/miss percentages) will be reviewed to assess qualifications. Weapons employment qualifications are valid through the subsequent training cycle.

5.3.3. **Failure to Qualify:** Failure to qualify in one weapon or weapon category does not invalidate qualification in others. SQ/CCs may declare a pilot unqualified in a weapon or weapon category at any time during a training cycle without affecting other weapon employment qualifications. If qualification is required at CMR/BMC, failure to qualify will result in regression to N-CMR/N-BMC until requalification is accomplished IAW [5.2.1](#)

**5.4. Familiarization (FAM):** Familiarization for weapons does not require a hit rate when compared to total employment attempts. The RAP Tasking memo further defines FAM requirements based on the training cycle.

**5.5. Weapons Employment Parameters.** The event requirements and parameters listed below form the basic framework for pilot weapons employment training. All weapons employment will conform to the limits established for each specific event. Pattern descriptions, procedures, training rules, and foul criteria are contained in AFI 11-2F-35A-V3 and AFI 11-214. Events performed at night may require higher minimum recovery altitudes based on AFI 11-214, Night Training Rules.

**5.5.1. Strafe Events.**

5.5.1.1. **Tactical Strafe (TAC STRF)** is a combined event. Any combination of low angle strafe (LAS) and/or high angle strafe (HAS) hits satisfies this training requirement. Each pass is a standalone event for weapons employment qualification with no maximum number of passes. Hit criteria (regardless of aircraft rounds limiter setting): acoustically scored or independently observed impacts on a point target, or bullet dispersion within 36 feet of any target. For PMD assessment: a stabilized pipper on target during witness cue.

5.5.1.2. **Low Angle Strafe (LAS).** Planned dive angle 15 degrees or less. Minimum recovery altitude is 75 feet above ground level (AGL). Foul line is 2,000 feet.

5.5.1.3. **High Angle Strafe (HAS).** Planned dive angle greater than 15 degrees. Minimum recovery altitude is 500 feet AGL.

**5.5.2. Guided Munitions Events:**

5.5.2.1. **Laser Guided Bomb (LGB).** An event in which a combat/training laser is employed to self-lase simulated/actual ordnance during an LGB delivery. Minimum recovery is safe escape/fuse arm/guide time required for the ordnance being simulated/delivered. Hit criteria: IAW AFTTP 3-1.

5.5.2.2. **Inertially Aided Munition (IAM).** An event in which an aircraft system is used to determine release parameters for JDAM, JSOW or WCMD weapons. Simulated or actual delivery of ordnance is required. Minimum recovery is safe escape for the ordnance being simulated/delivered. Hit criteria: IAW AFTTP 3-1.

5.5.3. **A/A Weapons Events: AIM-9/AIM-120/A/A GUN.** Hit criteria is IAW AFTTP 3-1 shot criteria and/or this Volume as applicable. Reference paragraphs [5.3](#) and [5.4](#)

**5.6. Full Scale Inert/Live Ordnance.** Full Scale Inert/Live ordnance training is essential to pilot combat capability. Every attempt should be made to give pilots the opportunity to employ as many types of weapons on the unit's UCML as possible. To provide this opportunity, pilots should expend the following ordnance:

5.6.1. Two actual IAM per training cycle.

5.6.2. Two actual LGB per training cycle.

## Chapter 6

### SPECIALIZED TRAINING

**6.1. Specialized Training Programs.** This chapter outlines upgrade training programs for special capabilities and qualifications. These programs are intended to provide a basic starting point and should be modified by the SQ/CC based on the unit's requirements and/or the upgradee's previous experience, qualifications, and documented performance. Unless governed by a formal syllabus, ground and device training for these programs will consist of unit-developed academics and scenarios. Flight training will be conducted in accordance with a program approved by the SQ/CC.

**6.2. Flight Lead (FL) Upgrade.** This program establishes the minimum guidelines for those pilots identified by the SQ/CC to upgrade to flight lead. This program takes an F-35A pilot with demonstrated tactical proficiency as a wingman and teaches flight leadership and decision-making.

6.2.1. Initial entry may be as a 2-ship/element FL until experience and proficiency warrant further progression, in which case, responsibilities for employment will not exceed two aircraft until certified as a 4-ship FL. The SQ/CC will determine when a 2-ship FL may train toward larger, more complex formations (three- or four-ship).

6.2.2. The following minimum flying hours are required prior to entering FL upgrade training:

6.2.2.1. 300 hours PAI, or

6.2.2.2. 200 hours PAI with 400 hours IP/FP/MP in a 11Fxx, 11K3C, or 11K3D AFSC, or

6.2.2.3. 50 hours PAI, if previously qualified as a 11Fxx AFSC flight lead.

6.2.2.4. **(ANG, AFRC, initial Air Education and Training Command (AETC) Cadre)** For converting units, OG/CCs may select prior flight lead qualified pilots to upgrade to flight lead concurrently with the MQT top off program regardless of PAI hours.

6.2.3. **Ground Training.** Ground training will consist of locally developed instruction in the following areas. Add unit specific ground training items for unique ordnance, pods, or capabilities.

6.2.3.1. **FL Responsibilities.** FL/wingman relationship, airmanship, judgment and maturity should be addressed as they relate to flying and squadron related duties.

6.2.3.2. **Mission Preparation.** Mission objectives, wingman requirements and responsibilities, currencies, capabilities, delegation of mission planning duties, and briefing preparation.

6.2.3.3. **Conduct of Flight Briefings and Debriefings.** Objectives, use of briefing guides and audiovisual aids, flight member involvement, briefing techniques, debriefing/questioning techniques, PMD review responsibilities and procedures.

6.2.3.4. **Conduct of Missions.** Control of flight, flight discipline, emergency procedures, training rules, and responsibilities to SQ/CC.

6.2.3.5. **AGSM Techniques.** Briefing, debriefing, and PMD assessment. Review the video, Anti-G Strain Technique Reinforcement and Assessment.

6.2.3.6. **IFEs and Emergency Diverts.** Divert decisions as an element, support of wingman during EPs, FL responsibility and authority, min fuel planning, and Air Traffic Control (ATC) assistance.

6.2.3.7. **Simulator Training.** To the maximum extent possible, high-fidelity simulator training should be incorporated into FL upgrade. SIM missions should precede flight training whenever possible and reinforce common errors allowing upgrade pilots to repeatedly practice upgrade tasks. Emergency procedures, lost wingman, and instrument training should be demonstrated in the SIM.

6.2.4. **Flight Training.** Flight training will be conducted in accordance with an upgrade program approved by the SQ/CC. Missions may be flown in any order. The program outlined below provides a basic starting point and may be modified by squadron commanders based on unit needs and/or upgradee's previous experience, qualifications, and documented performance. All FLUG training will be under the supervision of an IP or flight lead-qualified squadron supervisor flying as the upgrading student's wingman. Dissimilar adversaries should be used to the maximum extent practical during FLUG training. Units will add considerations/techniques for specialized capability (Electro optical targeting system (EOTS), DAS, etc) to applicable areas.

6.2.4.1. **FLUG Event Requirements.** Two formation takeoffs and landings, a day or night aerial refueling, trail departure, and a trail recovery will be accomplished as a flight lead during the program.

6.2.4.2. **Night Employment.** Employment with DAS is integral to night missions in every upgrade program. Include some non-DAS events in FLUG training. All A/G missions may be completed in the day or night to include certification.

6.2.4.3. **FLUG-BFM--Mission Objectives.** Practice leading and controlling a 1v1 BFM mission including WVR and BVR setups. Specific Mission Tasks: Briefing, WVR setups, intercepts to BFM, weapons employment, mission reconstruction and debriefing, PMD review/assessment (to include AGSM).

6.2.4.4. **FLUG-Air Combat Maneuvering (ACM)--Mission Objectives.** Practice leading and controlling a 2-ship transition to high-risk WVR environment from a detached (mutual support by presence) formation and practice basic ACM and A/A maneuvering WVR as an element. Specific Mission Tasks: Briefing, tactical intercepts to ACM, weapons employment, mission reconstruction and debriefing, PMD review/assessment (to include AGSM).

6.2.4.5. **FLUG-ACT(2)--Mission Objectives.** Practice leading and controlling a 2vX (dissimilar) air combat tactics ((D)ACT) mission. Specific Mission Tasks: Briefing, tactical formation, PID scenario, BVR setups for sweep and lane/point defense with emphasis on signature management and flow priorities versus various threats, low/slow

VID, ACMI procedures (if available), minimum fuel recovery, mission reconstruction and debriefing, PMD review/ assessment (to include AGSM).

**6.2.4.6. FLUG- SAT(2)--Mission Objectives.** Practice leading and controlling a 2-ship WD mission to a tactical range/working area in a medium/high threat scenario. Specific Mission Tasks: Mission planning, briefing, surface-to-air threat reactions, med alt 2-ship (EOTS employment), mission reconstruction and debriefing, PMD review and assessment.

**6.2.4.7. FLUG-CAS--Mission Objectives.** Practice leading and controlling an element under JTAC/FAC(A) engagement authority. Specific Mission Tasks: Briefing with GLO, briefing with JTAC/FAC(A), tactical departure, C2 check-in and authentication, Theater air control system (TACS)/Army Air-to-ground Station (AAGS) coordination, Fighter (FTR)-JTAC briefs, 9-line, Type 1/2/3 control, surface-to-air threat reactions, employment with EOTS, tactical egress, battle damage assessment (BDA), debrief with GLO, JTAC, and FAC(A).

**6.2.4.8. FLUG-SEAD (3 of 4)—Mission Objectives.** Demonstrate proficiency leading and controlling an element as number three of a four-ship in A/G SEAD employment/force protection tactics in medium/low altitude and high/low threat environments. Practice Air-to-surface weapon employment to support a simulated/actual strike package TOT window. Specific Mission Tasks: Force protect a simulated/ actual strike package (adversary air desired), coordinated four-ship medium/low altitude SEAD tactics, Air-to-surface weapon employment supporting a simulated/actual strike package TOT, and threat reactions.

**6.2.4.9. FLUG-SAT(3 of 4)--Mission Objectives.** Practice leading and controlling an element as number three of a 4-ship tactics mission to a tactical range/working area in a medium/high threat scenario. Specific Mission Tasks: Trail departure, opposed ingress, medium/high threat target area tactics, specialized capability (EOTS, DAS, etc) employment procedures/techniques (if applicable), emphasis on signature management and flow priorities versus various threats, tactical egress, comm jam procedures.

**6.2.4.10. FLUG-NSAT(2)--Mission Objectives.** Practice leading and controlling a 2-ship night WD mission to a tactical range/working area in a medium/high threat scenario. Specific Mission Tasks: Briefing, trail departure and joinup, surface-to-air (S/A) threat reactions, med alt 2-ship attacks (EOTS employment), DAS and non-DAS tactical formations, debrief, PMD review/assessment.

**6.2.4.11. FLUG-CERT(2)--Mission Objectives.** Assessment (by SQ/CC or designated representative) of flight lead abilities in a tactical mission scenario based on squadron tasking. Specific Mission Tasks: Briefing, mission accomplishment, flight management and control, mission reconstruction and debriefing, PMD review/assessment. This sortie is optional if UP is going directly to 4 Ship certification.

**6.2.4.12. FLUG-ACT(4)--Mission Objectives.** Practice leading and controlling a 4vX (D)ACT mission. Specific Mission Tasks: Briefing, tactical formation, PID/EID or VID scenario, BVR setups for sweep and lane/point defense (concentrating on element/flight integrity), ACMI procedures (if available), mission reconstruction and debriefing, PMD review/assessment (to include AGSM).



6.2.4.13. **FLUG-SEAD (4)—Mission Objectives.** Demonstrate proficiency leading and controlling a four-ship in A/G SEAD employment/force protection tactics in medium/low altitude and high/low threat environments. Practice Air-to-surface weapon employment to support a simulated/actual strike package TOT window. Specific Mission Tasks: Force protect a simulated/ actual strike package (adversary air desired), coordinated four-ship medium/low altitude SEAD tactics, Air-to-surface weapon employment supporting a simulated/actual strike package TOT, and threat reactions, mission reconstruction and debriefing, PMD review/assessment.

6.2.4.14. **FLUG-SAT(4)--Mission Objectives.** Practice leading and controlling a 4-ship WD mission to a controlled range. Specific Mission Tasks: Briefing, first run attack, surface-to-air threat reactions, med-alt 4-ship attacks (EOTS employment), landing, mission reconstruction and debriefing, PMD review/ assessment.

6.2.4.15. **FLUG-Night SAT (NSAT) (4)--Mission Objectives.** Practice leading and controlling a 4-ship tactics mission in a high-threat scenario. Specific Mission Tasks: Briefing, threat reaction(s) to air and surface threats, tactical ingress, high-threat target area tactics emphasis on signature management and flow priorities versus various threats, DAS and non-DAS tactical formations, specialized capability (EOTS etc.) employment procedures/techniques, mission reconstruction and debriefing, PMD review/assessment.

6.2.4.16. **FLUG-CERT(4)—Mission Objectives.** Assessment (by SQ/CC or designated representative) of flight lead abilities in a tactical mission scenario based on squadron tasking. Specific Mission Tasks: Briefing, mission accomplishment, flight management and control, mission reconstruction and debriefing, PMD review/assessment, critique.

6.2.5. **Flight Lead Certification.** A certification sortie is required by the SQ/CC or designated representative prior to operating as a 2/4 ship lead. (**Note:** If 2- and 4-ship upgrade training are combined, only one certification sortie is required). Following a successful certification sortie, failure to complete scheduled training events (i.e., LOWAT, AAR, etc.) need not delay certification. The SQ/CC will certify new flight lead's status, including any restrictions, in appropriate written format (letter, gradesheets, ARMS, etc).

6.2.6. **Strike Coordination and Reconnaissance (SCAR).** IAW joint doctrine, any qualified flight lead may also act as a Killer Scout/SCAR. If required by SQ/CC, accomplish additional theater specific ground or flying training within a locally directed syllabus.

**6.3. Instructor Pilot (IP) Upgrade.** This program establishes the minimum guidelines for those pilots identified to upgrade to IP. SQ/CCs may waive selected missions based on previous experience. FTU instructors will complete a formal syllabus course as defined in the USAF ETCA.

6.3.1. Pilots selected for IP upgrade must be 4-ship FLs with either:

6.3.1.1. 500 hours PAI or

6.3.1.2. 400 hours PAI with 1,000 IP/MP/FP, or

6.3.1.3. 200 hours PAI with 750 IP/MP/FP hours in an 11Fxx AFSC,

6.3.1.4. (**ARC**) For converting units, pilots may be designated by the OG/CC for IP upgrade regardless of time in the new PAI if they have at least 1,000 hours IP/MP/FP in a fighter AFSC and the IP upgrade will be conducted at FTU.

6.3.2. **Ground Training.** Upgrading pilots must satisfactorily complete the following unit-developed blocks of instruction prior to certification as IPs. Units will add considerations/techniques for specialized training (EOTS etc.) to applicable areas:

6.3.2.1. **Principles of Instruction.** Learning objectives, instructor responsibilities, IP/upgrade pilot relationship, training facilities, and publications.

6.3.2.2. **Techniques of Flight Instruction.** Training objectives and environment maneuver demonstration, performance and review, recognition and analysis of common pilot errors.

6.3.2.3. **Instructor Responsibility.** Airmanship, judgment, maturity and flight discipline during briefing, in-flight, debrief, and additional squadron duties.

6.3.2.4. **Conduct of Flight Briefing.** Training objectives, order of presentation, use of briefing guides and audiovisual aids, debriefing techniques.

6.3.2.5. **Conduct of Phase Briefings.** Techniques for briefing, use of visual aids, review of applicable phase briefings.

6.3.2.6. **AGSM Techniques.** Briefing, debriefing, and PMD assessment. Review the video, Anti-G Strain Technique Reinforcement and Assessment.

6.3.2.7. **Student Evaluations.** Grading systems and preparation/use of gradesheets.

6.3.2.8. **Simulator Training.** To the maximum extent possible, high-fidelity simulator training should be incorporated into IP upgrade. SIM missions should precede flight training whenever possible and reinforce common errors allowing upgrade pilots to repeatedly practice upgrade tasks. Emergency procedures, lost wingman, and instrument training should be demonstrated in the SIM.

6.3.3. **Flying Training.** Flight training will be conducted in accordance with an upgrade program approved by the OG/CC. IPUG sorties may be flown in any order, as aircraft configurations and sortie scheduling permit. Transition IPUG sorties do not need to be flown as a dedicated sortie if all the training events listed are completed during flying training. IPUG programs for pilots with previous fighter experience may be individually tailored, based on experience, currency, and documented performance. Unit programs should specify which tasks the upgrading IP will practice demonstrating, which tasks the upgrading IP will practice evaluating the "student's" performance, and which tasks he will do both. AAR may be completed on any mission.

6.3.3.1. **Night Training.** Employment with DAS is integral to night missions in every upgrade program. Include some non-DAS events in IPUG training. All A/G missions (including certification) may be completed in the day or night.

6.3.3.2. **IPUG Events.** Accomplish the following events during the IPUG: chase overhead pattern, chase simulated flame out (SFO), AAR (day or night), trail departure, trail recovery, formation T/O/landing from each position.

6.3.3.3. **IPUG-BFM--Mission Objectives.** Introduce upgrading IP to instructing 1v1 BFM. Specific Mission Tasks: Briefing, WVR setups, intercepts to BFM, weapons employment, chased VFR patterns, mission reconstruction and debriefing, PMD review/assessment (to include AGSM).

6.3.3.4. **IPUG-ACM--Mission Objectives.** Introduce upgrading IP to instructing 2-ship transition to high-risk WVR environment from a detached (mutual support by presence) formation. Specific Mission Tasks: Briefing, , tactical intercepts to ACM, weapons employment, mission reconstruction and debriefing, PMD review/assessment (to include AGSM).

6.3.3.5. **IPUG-Tactical Intercept (TI)--Mission Objectives.** Practice instructing and controlling a 2vX BVR low risk employment (upgradee should flow to avoid detection and completely avoid exposing the F-35A to the high-risk visual arena while executing 2-ship mutual support by presence tactics), sensor search techniques, tactical intercept mission. Specific Mission Tasks: Briefing, tactical formation, 2vX tactical intercepts to engagements, VID scenario (employment of EOTS), combat separations, mission reconstruction and debriefing, PMD review/assessment (to include AGSM).

6.3.3.6. **IPUG-Night TI (NTI)—Mission Objectives.** Instruct 2vX air-to-air employment with DAS. Primary emphasis should be placed on how DAS enhance night air-to-air element employment, rather than complex tactical employment scenarios. Additional emphasis 2vX BVR low risk employment (upgradee should flow to avoid detection and completely avoid exposing the F-35A to the high-risk visual arena while executing 2-ship mutual support by presence tactics), sensor search techniques, tactical intercept mission. Focus the briefing on DAS tactical formation, employment and air-to-air threat reactions with DAS. Specific Mission Tasks: Briefing, tactical formation, 2vX tactical intercepts to engagements, VID scenario (employment of EOTS), combat separations, mission reconstruction and debriefing, PMD review/assessment (to include AGSM).

6.3.3.7. **IPUG-ACT--Mission Objectives.** Practice instructing and controlling a 4vX air combat mission. Specific Mission Tasks: Briefing, tactical formation, 4vX tactical intercepts to engagement with emphasis on signature management and flow priorities versus various threats, positive identification (PID) scenario, mission reconstruction and debriefing, PMD review/assessment (to include AGSM).

6.3.3.8. **IPUG-SEAD—Mission Objectives.** Introduce upgrading IP to instructing and controlling an A/G SEAD employment/force protection tactics mission in medium/low altitude and high/low threat environments. Practice Air-to-surface weapon employment to support a simulated/actual strike package TOT window. Specific Mission Tasks: Force protect a simulated/ actual strike package (adversary air desired), coordinated four-ship medium/low altitude SEAD tactics, Air-to-surface weapon employment supporting a simulated/actual strike package TOT, and threat reactions, mission reconstruction and debriefing, PMD review/assessment.

6.3.3.9. **IPUG-SAT--Mission Objectives.** Introduce upgrading IP to instructing and controlling a tactics mission in a high-threat environment. Specific Mission Tasks: Briefing, tactical ingress, high-threat target area tactics with emphasis on signature management and flow priorities versus various threats, simulated/actual WD, specialized capability (EOTS, DAS, etc) employment procedures/techniques (if applicable), tactical egress, threat reactions, mission reconstruction and debriefing.

6.3.3.10. **IPUG-Night SAT (NSAT)--Mission Objectives.** Introduce upgrading IP to instructing and controlling a low- to medium-threat night tactics mission. Specific

Mission Tasks: Briefing, DAS and non-DAS tactical formation, low/medium-threat tactics with emphasis on signature management and flow priorities versus various threats, threat reactions, specialized capability (EOTS, DAS, etc) employment procedures/techniques (if applicable), mission reconstruction and debriefing.

6.3.3.11. **IPUG-CAS--Mission Objectives.** Introduce upgrading IP to instructing and controlling a low- to medium-threat Close Air Support tactics mission. Specific Mission Tasks: Briefing, DAS and non-DAS tactical formation, low/medium-threat tactics with emphasis on signature management and flow priorities versus various threats, threat reactions, specialized capability (EOTS, DAS, etc) employment procedures/techniques (if applicable), mission reconstruction and debriefing.

6.3.3.12. **IPUG-CERT--Mission Objectives.** Complete a successful IP evaluation IAW AFI 11-2F-35A-V2, using a profile simulating unit tasking.

6.3.4. **Instructor Evaluation.** A completed formal evaluation (AF Form 8, *Certificate of Aircrew Qualification*.) sortie is required by the SQ/CC or designated FE prior to performing instructor duties. Failure to complete scheduled training events (i.e. AAR, etc.) need not delay certification. The SQ/CC will certify new instructor's status, including any restrictions, in appropriate written format (AF Form 8, letter, gradesheets, ARMS, etc).

**6.4. Mission Commander (MCC) Upgrade.** This program establishes guidelines for upgrade to MCC. MCC upgrade programs will be tailored to meet specific unit taskings (i.e., Defense Suppression units will include EC related academics and training assets).

**6.4.1. Responsibilities:**

6.4.1.1. The MCC is responsible for planning coordinating, briefing, executing, and debriefing joint/composite force employment packages. Certified MCCs are authorized to lead joint/composite force missions.

6.4.1.2. MCCs may delegate authority and responsibility for a portion of the mission to a secondary MCC. For example, a MCC flying in an A/G weapons system may designate a MCC in an A/A weapons system to be in charge of the A/A portion of the mission.

6.4.2. **MCC Prerequisites.** Squadron commanders will consider ability, judgment, technical expertise, skill, and experience when selecting pilots for mission commander upgrade. Minimum qualification is 4-ship FL.

6.4.3. **Ground Training.** Upgrading MCCs must satisfactorily complete the following unit developed blocks of instruction prior to certification as a MCC.

6.4.3.1. **Mission Planning Considerations.** Range space and availability, ATC restrictions/considerations/flight plans, air refueling operations, inter-unit coordination, air-to-air and Air-to-ground force integration, integrated air defense system (IADS) penetration/avoidance, on-range controlling agencies coordination, GCI coordination. Review appropriate AFTTP 3-1 volumes for specific mission commander checklists and considerations.

6.4.4. **Flying Training.** As a minimum, the upgrading MCC will observe a certified MCC during the planning, briefing, flight, and debriefing of at least one composite force mission. Prior to certification, the upgrading MCC will then plan, brief, fly, and debrief a minimum of one mission under the supervision of an IP or Squadron Supervisor who is MC qualified.

6.4.4.1. Unit tasking should drive force composition, adversaries, and minimum flight size.

6.4.4.2. The MCC will determine overall upgrade mission effectiveness in case of fallout.

6.4.5. **Certification.** Following satisfactory completion of the above requirements, the SQ/CC will certify a new MCC by placing a letter of certification in the training folder and indicating qualifications on Letter of Xs.

**6.5. Simulator Instructor (SI).** The following SIM mission profiles should be used to train and qualify selected simulator instructors to operate the instructor operator station (IOS). The contractor simulator instructor program will be IAW the appropriate contract. SQ/CCs will determine the number of SIs required to perform unit mission. The required supervision for this upgrade program is an IOS-qualified/current SIM instructor.

6.5.1. **Academic Training.** Prior to the first IOS mission, the upgrading simulator instructor (USI) will complete the following unit developed blocks of instruction:

6.5.1.1. **Principles of Instruction.** Learning objectives, instructor responsibilities, instructor relationship, training facilities, and publications.

6.5.1.2. **Techniques of Flight Instruction.** Training objectives and environment; maneuver demonstration, performance, and review; recognition and analysis of common errors.

6.5.1.3. **Conduct of Flight Briefing.** Training objectives, order of presentation, use of briefing guides and audiovisual aids, debriefing techniques.

6.5.1.4. **Conduct of Phase Briefings.** Techniques for briefing, use of visual aids, review of applicable briefings.

6.5.1.5. **Evaluations.** Grading systems and preparation/use of gradesheets.

6.5.2. Mission Profiles (Based on Simulator Capabilities):

6.5.2.1. **SI-1, IOS Operations.** Mission initialization, Cathode Ray Tube (CRT) page review and modification, keyboard operation, light pen operation, emergency shutdown, record/playback, hard copy, performance, and procedures monitoring.

6.5.2.2. **SI-2, IOS Operations.** Tactics mission file, console-operated air intercepts and options, A/A weapons scoring, ground threats and modifications, A/G weapons scoring, S/A engagement scoring, program and simulator freeze, mission parameter modifications.

6.5.2.3. **SI-3, Practical Exercise.** The USI will conduct a regularly scheduled simulator mission from the IOS under supervision of an IOS-qualified instructor.

6.5.3. **Certification.** Following successful completion of SI-3, the SQ/CC will certify the pilot's SI status in appropriate written format (letter, ARMS, gradesheet, etc.).

**6.6. Electro-Optical Targeting System (EOTS):** The program outlined below provides a basic starting point and may be modified by SQ/CC based on unit needs and/or upgrading pilot's previous experience, qualifications, and documented performance. Pilots will not use EOTS for which they have not been formally trained.

6.6.1. **Ground Training.** Initial ground training will include instruction that covers infra red (IR) theory and mission planning, EOTS description and operation, medium altitude EOTS operations and tactics, Paveway (PW) II/III description and employment, non-LGB employment, and EOTS-assisted IAM employment. If no training devices are available, substitute a detailed discussion of procedures and techniques and document it on the gradesheet.

6.6.1.1. **SIM EOTS-1, Medium Altitude Introduction – Mission Objectives:** Introduce aircraft and EOTS-specific avionics operations, PW II/III deliveries, and buddy lasing. Specific Mission Tasks: EOTS ground operations, tuning/boresight procedures, weapons systems/fence checks, medium altitude ingress, EOTS system updates, PW II level deliveries, buddy lasing procedures, PW III mode 3 and mode 4 attacks, and unusual attitude recoveries.

6.6.1.2. **SIM EOTS-2, Medium Altitude Tactics – Mission Objectives:** Introduce medium-altitude threat reactions and IAM EOTS-assisted WD. Specific Mission Tasks: EOTS ground operations, tuning/boresight procedures, weapons systems/fence checks, medium altitude ingress, EOTS system updates, medium altitude threat reactions, EOTS-assisted medium altitude IAMs attacks and PW II level deliveries, and unusual attitude recoveries.

6.6.2. **General Instructions for Flying Training:** All sorties will be supervised by an IP or FL-qualified squadron supervisor who is EOTS qualified. Missions may be scheduled as a 2-, 3-, or 4-ship. Students may use DAS on any night mission if they are DAS-qualified. At least one day and one night sortie must be accomplished in order to be considered fully qualified.

6.6.2.1. **EOTS-1, Medium Altitude Introduction – Mission Objectives:** Introduce medium altitude PW II EOTS employment. Introduce EOTS A/A operations. Specific Mission Tasks: Mission planning, Preflight avionics and EOTS (built-in-test (BIT), multi function display (MFD) tuning, and gain/level procedures), medium-altitude ingress, EOTS system updates, air-to-air EOTS operations, EOTS-assisted PW II level/diving attacks, PW II simultaneous impacts, PW II buddy-laser attacks.

6.6.2.2. **EOTS-2, Day/Night Medium Altitude – Mission Objectives:** Introduce IAMs and PW III employment. Practice EOTS A/A operations. Specific Mission Tasks: IAM mission planning, preflight avionics, medium-altitude ingress, EOTS-cued IAM attacks, A/A EOTS operations, PW III level/diving attacks, buddy-laser.

6.6.2.3. **EOTS-3, Day/Night Proficiency – Mission Objectives:** Demonstrate proficiency in PW II & III attacks, buddy laser attacks, and EOTS-assisted general purpose attacks. Specific Mission Tasks: Mission planning, Preflight avionics and EOTS (BIT, tuning, and focus procedures), Medium-altitude ingress, Medium-altitude diving/level attacks, PW II attacks with live/inert guided bomb units (GBU), PW II simultaneous impact attacks, PW II buddy laser attacks.

**6.7. Electro-Optical Distributed Aperture System (DAS) Qualification Program:** Any upgrade program (MQT, FLUG, IPUG, MCC, etc) should include use of DAS during all phases of night flying. This upgrade is intended for a pilot who has never been qualified with DAS but is already CMR/BMC/BAQ. The intent of this program is to produce fully qualified four-ship wingmen, flight leads, and instructor pilots.

6.7.1. **Status upon Completion:** Completion of the qualification training allows the pilot to perform missions under DAS at or above minimum safe altitude (MSA) or IAW AFI 11-214, whichever is greater. See paragraph 6.7.6.8 for requirements to fly below MSA.

6.7.2. **Qualifications:**

6.7.2.1. Through DAS-opposed SAT (OPSAT)(4): Qualified 4-Ship DAS wingman.

6.7.2.2. DAS-FLUG (Flight Lead Upgrade): Qualified DAS 4-ship flight lead.

6.7.2.3. DAS-IPUG (Instructor Upgrade): Qualified DAS Instructor.

6.7.3. **Student to Instructor ratio: 1:1.**

6.7.4. **Ground Training.** Upgrading DAS pilots must satisfactorily complete the following requirements prior to DAS-FAM.

6.7.4.1. **Academics.** Academic instruction must include Air Force Research Labs (AFRL) or equivalent DAS academics, F-35A specific academics (ACC/TRSS has developed these academics (ACC/TRSS DAS Refresher Academics #CT-19 (CD ROM) and will distribute upon request), and a DAS Phase Brief. Each Operations Group is required to have one highly qualified and certified instructor (AFRL DAS Platform IP / Former FTU DAS IP/WIC graduate) to teach these academics. This instructor may certify additional instructors within the Operations Group.

6.7.4.2. **Device Training.** Device training will include:

6.7.4.2.1. **Night Cockpit Trainer (NCT)-1—Mission Objectives.** Introduce DAS Cockpit Set-up, DAS procedures, and emergency situations. Specific Tasks: DAS ground operations, use of interior and exterior aircraft lighting, Taxi/Take-off, enroute formations, emergency/egress procedures, recognition/prevention of spatial disorientation, unusual attitude recoveries, night/DAS instrument crosscheck, task saturation/prioritization.

6.7.5. Special Instructions (SPINS).

6.7.5.1. UP must fly at least 1 low illumination sortie. It is desired to fly at least some portion of an upgrade sortie during the period between sunset and nautical twilight.

6.7.5.2. DAS sorties will be flown in prescribed order.

6.7.5.3. DAS IP must complete a total of 10 DAS sorties, including upgrade sorties, before performing DAS IP duties.

6.7.6. **Flying Training.** All DAS syllabus sorties will be under the supervision of a qualified DAS IP. Upgrade sorties will be dedicated to use of DAS IAW the following sorties.

6.7.6.1. **DAS-FAM-Basic DAS Familiarization—Mission Objectives:** Introduce DAS formation, cross-check, threat reactions, and baseline intercepts. Specific Mission Tasks: DAS adjustment procedures, cockpit preparation, trail departure, ranging exercise, DAS G-awareness exercise, aircraft lighting demonstration, tactical 2-ship formation positions with a mixture of external lighting options including covert lighting, reduced lighting and lights, afterburner demonstration, flare demonstration, tactical turns and DAS assisted

rejoins, lost wingman/blind exercise, All Aspect Missile Defense (AAMD) and S/A threat reactions, controlled maneuvering (high illumination and D-model).

**6.7.6.2. DAS-INTRO, Single Ship Air-to-Air Introduction—Mission Objectives:** Introduce DAS A/A employment versus both high and low-speed targets. Specific Mission Tasks: Practice DAS tactical formation maneuvering and 1 v 1 air-to-air employment with DAS. 1 v 1 intercepts to include: a) BVR Launch and Leave, b) Low to high conversion, c) High to low conversion (Low speed target), d) AAMD, e) BVR launch and leave with short range recommit. Controlled maneuvering (high illumination).

**6.7.6.3. DAS-TI, Element Air-to-Air Basics—Mission Objectives:** Introduce two-ship tactical intercepts, A/A threat reactions and AAMD. Specific Mission Tasks: Emphasis 2vX BVR low risk employment with DAS (flow to avoid detection and completely avoid exposing the F-35A to the high-risk visual arena while executing 2-ship mutual support by presence tactics), single ship and element RMD procedures with DAS.

**6.7.6.4. DAS-SAT(4), 4-Ship Basic A/G—Mission Objectives:** Introduce DAS WD, S/A threat reactions, and 4-ship DAS formation. Specific Mission Tasks: Navigation (Medium altitude or low altitude [Illumination Permitting, reference paragraph 6.7.6.8 for low altitude requirements]), medium altitude diving deliveries, medium altitude multi-ship attacks, S/A threat reactions, 4-ship DAS formations and maneuvering.

**6.7.6.5. DAS-OPSAT(4), 4-Ship SAT (Opposed)—Mission Objectives:** Demonstrate proficiency in opposed 4-ship unit specific tactics. Specific Mission Tasks: Navigation (Medium altitude or low altitude [Illumination Permitting, reference paragraph 6.7.6.8 for low altitude requirements]), 4-ship unit specific tasks, surface-to-air threat reactions, air-to-air threat reactions, 4-ship TI to include: a) Combat Air Patrol (CAP) mechanics/formations, b) BVR and VID (EOTS) tactics, emphasis BVR low risk employment (flow to avoid detection and completely avoid exposing the F-35A to the high-risk visual arena while executing mutual support by presence tactics)

**6.7.6.6. DAS-FLUG Unit/Mission Specific—Mission Objectives:** Demonstrate proficiency in leading tactical employment of unit mission specific tasks in an increased threat scenario Specific Mission Tasks: Navigation (Medium altitude or low altitude [Illumination Permitting, reference paragraph 6.7.6.8 for low altitude requirements]), unit specific tasks, S/A threat reactions, A/A threat reactions. Adversaries are desired.

**6.7.6.7. DAS-IPUG—Mission Objectives:** Demonstrate proficiency in instructing 2-ship tactical intercepts, A/A threat reactions and AAMD. Mission Overview: Primary focus of this sortie is to instruct 2vX A/A employment with DAS. Primary emphasis should be placed on how DAS enhance night A/A element formations, rather than complex tactical employment scenarios. Additional emphasis 2vX BVR low risk employment (UP should flow to avoid detection and completely avoid exposing the F-35A to the high-risk visual arena while executing 2-ship mutual support by presence tactics). Specific Mission Tasks: 2vX tactical intercepts to engagements, VID scenario (employment of EOTS), combat separations.

**6.7.6.8. DAS Low Altitude Task List.** All of the following tasks must be completed to allow tactical maneuvering below MSA under high illumination (altitudes IAW AFI 11-214). These events may be flown during the basic DAS upgrade, as time permits, or may



be combined into an additional upgrade sortie. If flown during the basic DAS upgrade, these events may be spread over multiple sorties. However, the events will be flown in order and annotated on the UP's gradesheet.

6.7.6.8.1. Single ship low altitude tactical navigation (IP Chase).

6.7.6.8.2. Single ship low altitude familiarization (IP Chase) to include: a) Level hard turns, b) 30 degree pitch up/20degree pitch down, c) threat reactions.

6.7.6.8.3. Low altitude tactical formations to include turns and element threat reactions.

6.7.6.8.4. Low altitude tactical intercepts to include: a) Low to high conversion, b) High to low conversion, c) AAMD.

6.7.6.8.5. Low altitude SAT WD according to squadron tasking.

**6.8. FAC(A) Upgrade.** This program establishes the minimum guidelines for those pilots identified by the SQ/CC for FAC(A) upgrade training.

6.8.1. FAC(A) upgrade training will be IAW the current JCAS FAC(A) MOA. The MOA defines the Joint Mission Task List (JMTL) for a FAC(A) to attain certification and maintain qualification/currency. Following the upgrade, FAC(A)s will be capable of performing Type 1, 2, and 3 forms of terminal attack control with fixed wing and rotary wing assets, controlling indirect fires, and conducting their missions in day, night, permissive, and restrictive threat environments. They will be able to acquire, identify, mark targets, and pass target information (coordinates, 9-lines) verbally and via data-link.

6.8.2. Prior to FAC(A) certification, the SQ/CC will personally interview the UP and review FAC(A) responsibilities, scope of duties, authority, and philosophy. The SQ/CC will certify the new FAC(A)'s status, including any restrictions, in appropriate written format (grade sheet, training folder, Letter of Xs, etc.).

6.8.3. Pilots identified for FAC(A) upgrade must meet the following minimum requirements. Track 1 produces mission capable F-35A pilots proficient in F-35A FAC(A) mission tasks. Track 2 produces FAC(A) instructor.

6.8.3.1. Entry Prerequisites – Track 1

6.8.3.1.1. Qualified and current four-ship flight lead.

6.8.3.1.2. Qualified in EOTS operations.

6.8.3.1.3. Qualified F-35A DAS flight lead below MSA IAW paragraph [6.7.6.8](#)

6.8.3.2. Entry Prerequisites – Track 2

6.8.3.2.1. Current and Qualified F-35A FAC(A)

6.8.3.2.2. Current and Qualified F-35A Instructor

6.8.3.2.3. Students entering Track 2 directly from Track 1 (initial qualification) should perform two CT FAC(A) sorties after Track 1 completion before performing instructor duties.

6.8.4. **FAC(A) Ground Training.** Pilots designated for the FAC(A) special capability must have completed a Joint FAC(A) Training and Standardization Board (JFTSB) sanctioned

academic program at one time during their career IAW AETCI 13-102, *Operations Information File*, unless specified otherwise by MAJCOM/A3. The FAC(A) Joint Firepower Course (JFC) at the Air Ground Operations School (AGOS) meets this requirement. While graduation is **not** a course entry prerequisite, it is required prior to performing operational FAC(A) duties. If a FACJFC class is not readily available, OG/CCs may approve UPs to attend another accredited FAC(A) course. Units will develop additional local training in the following areas:

6.8.4.1. **FAC(A) academics and JMTL review.** Terminal attack control (Type 1, 2, and 3), radio relay, reconnaissance, indirect fires and Calls for Fire (CFF), asset coordination and deconfliction, BDA, target designation and marking, coordinate generation, SEAD coordination.

6.8.4.2. **FAC(A) responsibilities.** Unit training objectives, review of appropriate Joint/MAJCOM Instructions, AFIs and local guidance. Single-ship approach to enroute procedures, employment, obtaining mutual support, and local responsibilities.

6.8.4.3. **Mission preparation.** Fighter and JTAC requirements, currencies, proficiencies, capabilities, developing appropriate mission objectives, and briefing preparation.

6.8.4.4. **Conduct of missions.** Leadership and controlling area of operations, interaction with ground forces, employment with JTACs, coordination with other FAC(A)s, EPs, and training rules (TR).

6.8.4.5. **Practice FAC(A) briefing.** Administrative items, mission tasks, and contingencies.

6.8.4.6. **FAC(A) Simulator Training.** Units will incorporate simulator profiles into FAC(A) training to the maximum extent practical, depending on simulator capabilities and availability.

6.8.4.6.1. **ASC Sim-1 Air Strike Control Basics – Mission Objectives:** Introduce air strike control mission tasks and FAC(A) cockpit resource management (CRM) techniques. Demonstrate proficiency in System/EOTS marks, use of TOT clock and LGB employment. Specific Mission Tasks: Introduce airborne TACS/AAGS coordination and authentication, practice helmet mounted display (HMD), search and rescue (SAR) and EOTS marks, practice low altitude TOT clock scenario, introduce airborne map plotting, practice medium altitude LGB employment, practice FAC(A) cockpit management, discuss night FAC(A) cockpit management.

#### 6.8.5. **FAC(A) Flight Training.**

6.8.5.1. The mission profiles listed below are organized in a building-block approach. The SQ/CC may modify profiles as necessary, but will ensure the following guidelines are met:

6.8.5.1.1. All FAC(A) upgrade training will be under the supervision of a FAC(A)-certified IP. Unless specified otherwise, the IP will fly chase or other deconflicted position to properly assess UP performance. Throughout the upgrade, IP will prepare UPs to successfully accomplish all aspects of a single-ship tactical mission.

6.8.5.1.2. A dedicated FAC(A) certification mission is required and will be flown with the SQ/CC or designated representative.

6.8.5.1.3. Required FAC(A) upgrade missions/events. Medium altitude ASC, Low altitude ASC, Night ASC (NASC), actual JTAC, dissimilar fighters, artillery deconfliction, Troops in Contact (TIC), and 12 ASC events (of which eight must be Type I, eight with fixed wing, four involve actual WD, and one at night).

6.8.5.1.4. Unaccomplished tasks. Unaccomplished scheduled training events need not delay certification. The SQ/CC may certify the FAC(A) with appropriate restrictions based on unaccomplished training. The FAC(A) is restricted from performing unaccomplished events until that task is successfully completed in an upgrade status.

6.8.5.1.5. FAC(A) upgrade missions and events may be flown in any order, provided day training precedes night.

6.8.5.1.6. Schedule actual JTACs, fighter support, and dissimilar assets to the maximum extent practical.

#### 6.8.5.2. FAC(A) Missions – Track 1.

6.8.5.2.1. **ASC-1 (Track 1) – Medium-Altitude ASC – Mission Objectives:** Introduce fundamental mission elements of medium-altitude, reduced-threat ASC in a sterile (non scenario) environment to include target plotting, acquisition, marking, fighter rendezvous, talk-ons and observation positions in types 1, 2, and 3 control. Practice use of EOTS for marking, visual recce, and EOTS recce. Specific Mission Tasks: FAC(A) mission planning, fighter coordination and FAC(A) mission brief (IP briefed), TACS/AAGS agency coordination, medium-altitude, navigation and safe passage procedures, medium-altitude ASC procedures, terminal control of CAS attacks, Fighter/FAC(A) deconfliction, Visual/EOTS recce, target marking, EOTS.

6.8.5.2.2. **ASC-2 (Track 1) – Medium-Altitude ASC – Mission Objectives:** Introduce medium-altitude, reduced-threat ASC in scenario, artillery calls for fire and deconfliction, SEAD support and threat reactions. Practice target plotting, acquisition, marking, fighter rendezvous, talk-ons, and observation positions in types 1 and 3 control. Introduce stand-off weapons considerations in CAS under a BVR type 3 scenario. Specific Mission Tasks: FAC(A) mission planning, fighter coordination and FAC(A) mission brief, TACS/AAGS agency coordination, Medium-altitude navigation and safe passage procedures, Medium-altitude ASC procedures, Target plotting, acquisition, identification (ID), and marking, fighter coordination and rendezvous, observation position, verbal and/or sensor talk-ons, terminal control of CAS attacks, Fighter/FAC(A) deconfliction, AO egress, Artillery deconfliction, S/A threat reactions, BDA, In-flight report.

6.8.5.2.3. **ASC-3 (Track 1) – Medium-Altitude ASC with TIC – Mission Objectives:** Introduce troops-in-contact and collateral damage scenarios, buddy lasing deliveries, FAC(A) changeover, and remote controlled aircraft (RPA) deconfliction in a limited comm.-jamming environment. Practice medium-altitude, reduced-threat ASC under type 1 and 2 control. Specific Mission Tasks: FAC(A)

mission planning, fighter coordination, and FAC(A) mission brief, TACS/AAGS agency coordination, Medium-altitude navigation and safe passage procedures, medium-altitude ASC procedures, FAC(A) changeover, JTAC coordination in a limited comm.. Jamming environment, verbal and/or sensor talk-ons, terminal control of CAS attacks, Fighter/FAC(A) deconfliction, Artillery and airborne SEAD coordination and deconfliction, Observation position and terminal control of CAS attacks with troops in contact/collateral damage procedures in a cultural area, buddy lasing for diving deliveries in a TIC scenario, ground laser designator (GLD) attacks, RPA deconfliction.

**6.8.5.2.4. ASC-4 (Track 1) — FAC(A) Element Tactics — Mission Objectives:** Introduce FAC(A) element tactics, limited time-over-target and urban CAS tactics. Practice low-threat ASC. Specific Mission Tasks: FAC(A) mission planning, fighter coordination, and FAC(A) mission brief, employ as a FAC(A) element, TACS/AAGS agency coordination, medium-altitude navigation and safe passage procedures, medium-altitude ASC procedures, terminal control of CAS attacks, FTR/FAC(A)/FAC(A) wingman deconfliction, Artillery and airborne SEAD coordination and deconfliction, GLD attacks, observation position and terminal control of CAS attacks with timing restriction, S/A threat reactions, BDA, In-flight report.

**6.8.5.2.5. ASC-5 (Track 1) – Low-Altitude ASC – Mission Objectives:** Introduce low-altitude, reduced-threat ASC with a FAC(A) element. Introduce rotary wing aircraft integration. Specific Mission Tasks: FAC(A) mission planning, fighter coordination, and FAC(A) mission brief, Employ as a FAC(A) element, TACS/AAGS agency coordination, Low- and medium-altitude navigation and safe passage procedures, Low-altitude ASC procedures, terminal control of CAS attacks, Fighter/FAC(A)/FAC(A) wingman deconfliction, Low-altitude, timing-coordinated compressed attacks, Artillery and SEAD coordination and deconfliction.

**6.8.5.2.6. ASC-6 (Track 1) – Demonstrate Proficiency in ASC – Mission Objectives:** Demonstrate proficiency in ASC. Specific Mission Tasks: FAC(A) mission planning, fighter coordination, and FAC(A) mission brief, Employ as a FAC(A) element, TACS/AAGS agency coordination, medium-altitude navigation and safe passage procedures, medium- or low-altitude ASC procedures, Artillery and airborne SEAD coordination and deconfliction, rotary wing aircraft integration, buddy lasing deliveries, Observation position and terminal control of CAS attacks with TIC scenarios.

**6.8.5.2.7. NASC-2 (Track 1) Multiple Fighters ASC – Mission Objectives:** Introduce night ASC against non-illuminated targets with troops-in-contact, and night medium-altitude threat reactions. Practice reduced-threat night ASC with night DAS under type 1 and 2 control. Specific Mission Tasks: FAC(A) mission planning, fighter coordination, and FAC(A) mission brief, TACS/AAGS agency coordination, night medium-altitude navigation and safe passage procedures, medium-altitude ASC procedures, artillery and airborne SEAD coordination and deconfliction, ASC for scenarios with troops-in-contact.

**6.8.5.2.8. NASC-3 (Track 1) Demonstrate Proficiency in Night ASC – Mission Objectives:** Demonstrate proficiency in reduced-threat night ASC. Specific Mission Tasks: FAC(A) mission planning, fighter coordination, and FAC(A) mission brief, TACS/AAGS agency coordination, FAC(A) element tactics, medium-altitude navigation and safe passage procedures, medium-altitude ASC procedures, Artillery and airborne SEAD coordination and deconfliction.

### **6.8.5.3. Air Strike Control Instruction – Track 2**

**6.8.5.3.1. ASC-31 (Track 2) Introduce Day ASC Instruction — Mission Objectives:** Introduce day ASC instruction. Specific Mission Tasks: FAC(A) mission planning, fighter coordination and FAC(A) mission brief, employ as a FAC(A) element, TACS/AAGS agency coordination, medium-altitude ASC procedures, artillery and airborne SEAD coordination and deconfliction, observation position and terminal control of CAS attacks with timing (TOT Clock) restriction, S/A threat reactions. Conduct an instructional ASC brief in a clear, concise manner to include fighter coordination, FAC(A) techniques and wingman contracts/responsibilities, Demonstrate proficiency in safely controlling and deconflict airborne assets, practice ASC scenario management. Conduct an instructional debrief, offer instructor techniques, find the majority of the execution errors and draw valid lessons learned.

**6.8.5.3.2. ASC-32 (Track 2) Demonstrate Proficiency in Day ASC Instruction — Mission Objectives:** Demonstrate proficiency day ASC instruction. Specific Mission Tasks: FAC(A) mission planning, fighter coordination and FAC(A) mission brief, employ as a FAC(A) element, TACS/AAGS agency coordination, medium-altitude ASC procedures, artillery and airborne SEAD coordination and deconfliction, observation position and terminal control of CAS attacks with timing (TOT Clock) restriction, surface-to-air threat reactions, BDA. Brief ASC in a clear, concise manner to include fighter coordination, FAC(A) techniques and wingman contracts/responsibilities, Demonstrate proficiency in safely managing an ASC mission scenario, Demonstrate proficiency in providing in-flight instruction for significant student errors. Conduct an instructional debrief or IP debrief of FAC(A) student sortie, offer instructor techniques, find the majority of the execution errors and draw valid lessons learned.

**6.8.5.3.3. NASC-33 (Track 2) Demonstrate Proficiency in Night ASC Instruction — Mission Objectives:** Demonstrate proficiency in NASC instruction. Specific Mission Tasks: FAC(A) mission planning, fighter coordination and FAC(A) mission brief, employ as a FAC(A) element, TACS/AAGS agency coordination, medium-altitude ASC procedures, artillery and airborne SEAD coordination and deconfliction, observation position and terminal control of CAS attacks with timing (TOT Clock) restriction, surface-to-air threat reactions, BDA. Brief Night ASC in a clear, concise manner to include fighter coordination, FAC(A) techniques and wingman contracts/responsibilities, Demonstrate proficiency in safely managing a night ASC mission scenario, Demonstrate proficiency in providing in-flight instruction for significant student errors, Conduct an instructional debrief or IP debrief of FAC(A) student sortie, offer instructor techniques, find the majority of the execution errors and draw valid lessons learned.

**6.9. Low Altitude Step-Down Training (LASDT).** This training is normally conducted as part of IQT. It may be used to requalify pilots who are significantly out of currency or to train pilots to a lower category.

6.9.1. To conduct low altitude operations safely, pilots need to be knowledgeable of aircraft handling and performance characteristics, tactical formation, intercept, offensive maneuvering, defensive reactions, and navigation. LASDT qualifies pilots to conduct LOWAT at or below 1,000 feet AGL. LOWAT block/category certification is required prior to performing unsupervised operations in that block/category.

6.9.2. To provide a structured approach, the step-down training program is built on a multi-phase training process IAW **Table 6.1** There is no time limit to progress beyond Category I and progress will be based upon individual pilot proficiency and training availability. All LASDT missions will be supervised by an IP or FL-qualified SQ supervisor who has completed LASDT training and is current in the LOWAT category being instructed.

**Table 6.1. LOWAT Categories.**

Category	Altitude Block	Upgrade Sorties To Certify
I	1,000-500	LASDT-1, LASDT-2,
II	Below 500-300	LASDT-3
III	Below 300-100	LASDT-4

6.9.3. Category I qualification is a minimum requirement for CMR status. Units may accept a transfer pilot's LOWAT qualification from other units. Category II training may not be conducted during MQT.

6.9.4. Entry into LASDT (other than at FTU) requires SQ/CC approval. The altitude to which a pilot is certified is determined by the SQ/CC and based on the lowest altitude at which all tasks can be comfortably performed and proficiency demonstrated. The goal is proficiency down to the minimum altitude compatible with squadron mission. Upon successful completion of LASDT training, the SQ/CC will certify the pilot to the minimum approved altitude of the LASDT category. Squadrons may accept documented LASDT certification for pilots coming from other units/commands. With SQ/CC approval, low altitude training conducted at a formal course may be used to fulfill applicable requirements of this paragraph.

6.9.5. LASDT will be scheduled and briefed as a primary portion of the mission. Compatible RAP CT events may be accomplished in conjunction with LASDT as long as the objectives of the LASDT sortie are met. LASDT will not be flown as an alternate mission.

6.9.6. **Ground Training.** Coverage should support the mission and concept of operations of the squadron, incorporating appropriate portions of AFTTP 3-1 and AFTTP 3-3. All academic training will be completed prior to flight training/briefing.

6.9.6.1. **AHC.** LASDT AHC will be IAW AFTTP 3-3, LOWAT exercises. Discuss aircraft performance as it applies to the low altitude environment, to include: control

response (low/high speed, over-G potential, speed brake use, stores effects); afterburner (fuel considerations, selection techniques); acceleration/deceleration; level turns; vertical maneuvering; climb/dive/slice recoveries; effects of gross weight, power settings, density altitude, G-loading, and bank angles; terrain avoidance (ridge crossings); HMD use; terrain clearance versus turning room; dangers inherent in overbanking during turns; importance of frequent cross check of aircraft attitude relative to horizon; and operation/use of ground collision avoidance advisory systems.

6.9.6.2. **Environmental Factors.** Discuss out-of-cockpit visibility and field of view (FOV) restrictions, sun angle, terrain and G-excess illusions/perceptions, WX considerations, and use of the HMD.

6.9.6.3. **Task Management.** Discuss low altitude tasks and task management/prioritization concept.

6.9.6.4. **Low Altitude Tactical Navigation (LATN).** Discuss dead reckoning, pilotage, inertial navigation system (INS) use/techniques, RADAR, etc.

6.9.6.5. **LATF.** Discuss formations, hazards at low altitudes, task prioritization, tactical turns, visual lookout/mutual support.

6.9.6.6. **Defensive Reactions.** Discuss visual lookout and mutual support, threat weapons systems envelopes, defensive maneuvering against A/A and S/A threats, and flight member deconfliction.

6.9.6.7. Discuss factors affecting low level awareness: airspeeds and maneuverability, formation size and design, formation and pilot responsibilities, environmental effects on visibility, factors influencing individual proficiency and airmanship, route familiarity and complacency, air turbulence, jet wash and bird strike, route obstacles, terrain features, planning and chum responsibilities, route abort procedures, techniques and considerations.

6.9.6.8. **Special Subjects.** Discuss training rules, WX abort procedures, aircraft emergencies, and separation/disengagement considerations.

6.9.6.9. **Low Altitude A/A (LOW A/A) Employment.** Discuss level intercepts (horizontal turn radii, preferred aspects, pursuit options), fuel rules of thumb, required turning room, maximum dive angle restrictions, low altitude weapons employment (weapons envelope/rules of thumb, weapons selection, missile pursuit curves, minimum launch altitudes), low altitude intercept (radar capabilities including detection, line of sight (LOS) problems, false targets, and sorting), low-to-high, high-to-low, and co-altitude intercepts (altitude, airspeed, and power considerations, vertical vice offset conversions, conversion aborts, high/low speed targets, use of HMD, and VID procedures against a low/slow speed target with emphasis placed on threat VID procedures IAW AFTTP 3-1).

#### 6.9.7. **Flying Training:**

6.9.7.1. **LASDT-1 (Single-Ship w/Chase).** Mission Objectives. Demonstrate proficiency in single-ship maneuvering between 5,000 and 1,000 feet AGL. Introduce LOWAT Category I operations. Specific Mission Tasks: AHC IAW AFTTP 3-3, LOWAT exercises (level turn exercise, turning room demo, acceleration/ deceleration

exercise, descent awareness training, vertical jink turns, orthogonal surface-to-air missile (SAM) break, reversals, visual lookout exercise); G-awareness exercise; low level navigation; airspeed control; fuel management; ridge crossings; terrain masking/maneuvering techniques for level/rolling/rough terrain; altitude awareness/control; attack maneuvering; practice “knock it off” (KIOs); defensive reactions; and single-ship low altitude tactical intercepts.

6.9.7.2. **LASDT-2 (2-Ship).** Mission Objectives. Demonstrate proficiency in 2-ship LOWAT Category I operations. Introduce LOWAT Category I 2-ship maneuvering against a low/slow target. Specific Mission Tasks: G-awareness exercise; low level navigation; fuel management; low altitude tactical formation (LATF); terrain masking/maneuvering techniques for level/rolling/rough terrain; ridge crossings; altitude awareness/control; attack maneuvering; practice KIOs; defensive reactions; WX route abort; 2-ship low altitude TI and low altitude weapons employment considerations, altitude awareness/control, attack maneuvering, practice KIOs, 2-ship low altitude TI, low altitude weapons employment considerations, and EID/VID procedures against a low/slow target (dissimilar asset required; helicopter, if able) with emphasis placed on threat VID procedures IAW AFTTP 3-1. Upon satisfactory completion of this mission, the SQ/CC can certify the pilot to LOWAT Category I.

6.9.7.3. **LASDT-3 (2- Ship).** Mission Objectives. Introduce/Demonstrate proficiency in 2-ship LOWAT Category II operations. Specific Mission Tasks: Same as LASDT-1 only accomplish in the 300-500 foot environment as the student proficiency increases. Upon satisfactory completion of this mission, the SQ/CC can certify the pilot to LOWAT Category II.

6.9.7.4. **LASDT-4 (2- Ship).** Mission Objectives. Introduce/Demonstrate proficiency in two-ship LOWAT Category III operations. Specific Mission Tasks: Same as LASDT-1 only accomplish in the 100-300 foot environment as the student proficiency increases. Upon satisfactory completion of this mission, the SQ/CC can certify the pilot to LOWAT Category III.

**6.10. Nuclear Certification.** Establish a nuclear certification program for tasked units to accomplish the requirements necessary to provide and maintain a nuclear capability IAW published policy guidance and applicable Air Force instructions.

**6.11. F-35A Block Differences Training.** To train between all variants of the F-35A, pilots must be current and qualified prior to beginning training.

6.11.1. **Academics.** Academic instruction should be tailored to the pilot’s previous experience and should concentrate on the differences between the F-35A blocks. Instruction should address avionics system, electrical systems, engine differences (as applicable), EPs, sensors modes (as applicable). If available, an AETC formal course meets the requirements for academics and device training.

6.11.2. **Device Training.** Pilots should receive simulator training as required by previous experience. This simulator should include systems EPs, practice instrument procedures, review of radar and intercept procedures, review of air-to-ground systems, and CAPs. Pilots assigned/attached to units without concurrent simulators will substitute two SEPTs for the simulator.



6.11.3. **Flying Training.** Block differences training may be conducted during MQT. Pilots who do not require MQT should receive one supervised aircraft sortie. Flight briefing should stress cockpit procedures and employment techniques.

**6.12. Contingency/Exercise Spin-Up Training** This training will be conducted prior to support of contingency operations (if time permits) or exercises. The objective of this training is to ensure the pilot's ability to conduct all missions in support of expected tasking. For contingency operations, units are responsible for contacting appropriate gaining command/operations to determine expected mission taskings. For exercises, units are responsible for referring to appropriate exercise plans (EXPLANS) and contacting appropriate exercise POCs prior to deployment to determine expected mission taskings. These EXPLANS include COMACC EXPLANS 80 for RED, MAPLE, and Coalition Flags, EXPLANS 323 for Air Warrior 1, and EXPLANS 163 for Air Warrior 2. This assures the units are prepared for the appropriate tasking and allows the responding OG/CC to tailor this training for the theater, threat, and tactics for the assigned task. The SQ/CC is then responsible for implementation of this spin-up, prosecuting the required missions, and determining the specific requirements necessary to reach the desired level of proficiency. Emphasis will be placed on training needed for missions not accomplished in daily operations. This training will be conducted IAW all applicable instructions.

6.12.1. If a pilot is not assigned to the tasked squadron, they must receive spin-up training as determined by the tasked SQ/CC. This applies to all attached pilots (OG/WG/HQ staffs, etc.), and all pilots augmenting from other squadrons (operational, FTU, WS, test, etc.). The objective of this training is to ensure attached/augmenting pilot is proficient to conduct all missions in support of expected tasking. The deploying SQ/CC will determine the amount of spin-up training required for each attached/augmenting pilot based on the pilot's level of proficiency, currency, qualification, experience, etc. For augmenting pilots, once the amount of spin-up training is determined, the augmentee's SQ/CC is responsible for ensuring the spin-up training is accomplished.

6.12.2. **Ground Training.** All applicable pilots will complete ground training as necessary prior to their support of contingency operations or exercises.

6.12.2.1. **Academics.** Units will brief exercise SPINS, ROE/TR, command and control (C2), engagement authority and procedures, and VID. MAJCOM/IN will assist the unit's intelligence functions in the development of threat assessments and visual recognition training materials.

6.12.2.2. **Visual Recognition.** Pilots must be able to visually identify aircraft (rotary and fixed-wing, including joint/allied assets) they are likely to encounter by name or numerical designator and determine whether the aircraft is a threat or non-threat (training should incorporate all aspects/angles, theater-specific paint schemes/fin flashes, and various configurations), identify ground equipment, and determine major categories of naval vessels.

6.12.3. **Flying Training.** Tailor spin-up training to ensure all supporting pilots are proficient, current, and qualified in all expected mission taskings.

**6.13. Forms Adopted.** AF Form 847, *Recommendation for Change of Publication*, AF Form 8, *Certificate of Aircrew Qualification*.

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

## Attachment 1

## GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

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AF Form 847, *Recommendation for Change of Publication*

AF Form 8, *Certificate of Aircrew Qualification*

AFI36-2211, *Management of Air Force Training Systems*, 5 June 09

AF Records Disposition Schedule in AFRIMS,  
<https://www.my.af.mil/afrims/afrims/afrims/rims.cfm>

*Abbreviations and Acronyms*

**A/A**—Air-to-Air

**A/G**—Air-to-Ground

**AAA**—Anti Aircraft Artillery

**AAGS**—Army Air-to-Ground System

**(N)AAR**—(Night) Air-to-Air Refueling

**AAMD**—All Aspect Missile Defense

**(D)ACBT**—(Dissimilar) Air Combat Training

**ACC**—Air Combat Command

**ACDE**—Aircrew Defense Ensemble

**ACDT**—Aircrew Defense Training

**(D)ACM**—(Dissimilar) Air Combat Maneuvering

**ACMI**—Air Combat Maneuvering Instrumentation

**(D)ACT**—(Dissimilar) Air Combat Tactics

**ACTS**—Air Combat Training System

**AETC**—Air Education and Training Command

**AEF**—Aerospace Expeditionary Force

**AF**—Air Force

**AFI**—Air Force Instruction

**AFRC**—Air Force Reserve Command

**AFRL**—Air Force Research Lab

**AFIRMS**—Air Force Integrated Readiness Measurement System

**AFSC**—Air Force Specialty Code

**AGL**—Above Ground Level

**AGOS**—Air Ground Operations School

**AGSM**—Anti-G Straining Maneuver

**AHC**—Aircraft Handling Characteristics

**AI**—Air Interdiction

**ANG**—Air National Guard

**AOA**—Angle of Attack

**AOS**—Air Operations Squadron

**API**—Aircrew Position Indicator

**ARC**—Air Reserve Components (includes ANG and AFRC)  
**ARMS**—Aircrew Resource Management System  
**(N)ASC**—(Night) Air Strike Control  
**ATC**—Air Traffic Control  
**AWACS**—Airborne Warning and Control System  
**BAQ**—Basic Aircraft Qualification  
**BDA**—Battle Damage Assessment  
**(D)BFM**—(Dissimilar) Basic Fighter Maneuvers/Maneuvering  
**BMC**—Basic Mission Capable  
**BVR**—Beyond Visual Range  
**C2**—Command, and Control  
**C3I**—Comman, Control, Communications, and Intelligence  
**CAF**—Combat Air Forces  
**CAP**—Combat Air Patrol, Critical Action Procedures  
**CAS**—Close Air Support  
**CAT**—Category  
**CB-Coded**—Designated Test Aircraft  
**CC**—Commander  
**CC-Coded**—Designated Combat Aircraft  
**CDE**—Collateral Damage Estimate  
**CFTR**—Composite Force Training  
**CMR**—Combat Mission Ready  
**COT**—Continuous Overseas Tour  
**COTS**—Commercial Off The Shelf  
**CRC**—Combat Reporting Center  
**CRM**—Cockpit Resource Management  
**CRT**—Cathode Ray Tube  
**CT**—Continuation Training  
**CTS**—Course Training Standards  
**CV**—Vice Commander  
**DAS**—Distributed Aperture System  
**DCA**—Defensive Counter Air

**DCA**—N—Defensive Counter Air Night  
**DEAD**—Destruction of Enemy Air Defense  
**DOC**—Designed Operational Capability  
**DRU**—Direct Reporting Unit  
**DT**—Dynamic Targeting  
**EA**—Electronic Attack  
**EC**—Electronic Combat  
**ECM**—Electronic Countermeasures  
**EEL**—Essential Elements of Information  
**EID**—Electronic Identification  
**EOTS**—Electro-Optical Targeting System  
**EP**—Emergency Procedure, Electronic Protection  
**EPE**—Emergency Procedures Evaluation  
**ETCA**—Education and Training Course Announcements  
**EW**—Electronic Warfare  
**EXP**—Experienced  
**FAC**—Forward Air Controller  
**FAC(A)**—Forward Air Controller (Airborne)  
**FACJFC**—FAC(A) Joint Firepower Course  
**FAM**—Familiarization  
**FCF**—Functional Check Flight  
**FE**—Flight Examiner  
**FEF**—Flying Evaluation Folder  
**FHP**—Flying Hour Program  
**FL**—Flight Lead  
**FLT/CC**—Flight Commander  
**FLUG**—Flight Lead Upgrade  
**FMS**—full mission simulator  
**FOA**—Field Operating Unit  
**FOV**—Field of View  
**FP**—First Pilot, Force Protection  
**FSO**—Flight Safety Officer

**FSWD**—Full Scale Weapons Delivery  
**FTR**—Fighter  
**FTU**—Formal Training Unit  
**FW**—Fighter Wing  
**G**—Gravitational Load Factor  
**GBU**—Guided Bomb Unit  
**GCI**—Ground Controlled Intercept  
**GLD**—Ground Laser Designator  
**GLO**—Ground Liaison Officer  
**GLOC**—G-induced Loss of Consciousness  
**GO**—General Officer  
**HARTS**—High Angle Recovery Training  
**HAS**—High Angle Strafe  
**HHQ**—Higher Headquarters  
**HMD**—Helmet Mounted Display  
**IA**—Information Assurance  
**IADS**—Integrated Air Defense System  
**IAM**—Inertial Aided Munitions  
**IAW**—In Accordance With  
**ID**—Identify/Identification  
**IFE**—In Flight Emergency  
**INEXP**—Inexperienced  
**INFLTREP**—Inflight Report  
**INS**—Inertial Navigation System  
**IOS**—Instructor Operator Station  
**IP**—Instructor Pilot, Initial Point  
**IPUG**—Instructor Pilot Upgrade  
**IQT**—Initial Qualification Training  
**IR**—Infrared  
**IRC**—Instrument Refresher Course  
**IRMD**—Infrared Missile Defense  
**JCAS**— Joint Close Air Support

**JDAM**—Joint Direct Attack Munition  
**JFTSB**—Joint FAC(A) Training and Standardization Board  
**J-SEAD Mission**—Joint Suppression of Enemy Air Defense  
**JSOW**—Joint Standoff Weapon  
**JTAC**—Joint Terminal Attack Controller  
**JMTL**—Joint Mission Task List  
**KIAS**—Knots Indicated Airspeed  
**KIO**—Knock It Off  
**LAO**—Local Area Orientation  
**LAS**—Low Angle Strafe  
**LASDT**—Low Altitude Step-Down Training  
**LATF**—Low Altitude Tactical Formation  
**LATN**—Low Altitude Tactical Navigation  
**LGB**—Laser Guided Bomb  
**LOS**—Line of Sight  
**LOW ALT**—Low Altitude  
**LOWAT**—Low Altitude Training  
**MAJCOM**—Major Command  
**MCC**—Mission Commander  
**MDS**—Mission Design Series  
**MDT**—Mission Directed Training  
**MFD**—Multi Function Display  
**MND**—Maintenance Non-Deliver  
**MOA**—Military Operating Area, Memorandum of Agreement  
**MP**—Mission Pilot  
**MQT**—Mission Qualification Training  
**MR**—Mission Ready  
**MSA**—Minimum Safe Altitude  
**MSN**—Mission  
**MRT**—Mission Rehearsal Trainer  
**N/A**—Not Applicable  
**NAF**—Numbered Air Force



**NCT**—Night Cockpit Trainer  
**NORAD**—North American Air Defense  
**NT**—Night  
**NTI**—Night Tactical Intercept  
**NVC**—Night Vision Camera  
**OCA**—Offensive Counter Air  
**OCA—A**—Offensive Counter Air-Air  
**OCA—S**—Offensive Counter Air-Surface  
**OG**—Operations Group  
**OPR**—Office of Primary Responsibility  
**PAA**—Primary Aerospace Vehicle Authorized  
**PAI**—Primary Aerospace Vehicle Inventory  
**PCDS**—Personal Computer Debriefing  
**PCS**—Permanent Change of Station  
**PFT**—Programmed Flying Training  
**PID**—Positive Identification  
**PMD**—Portable Memory Device  
**PW**—Paveway  
**QUAL**—Qualification  
**RAP**—Ready Aircrew Program  
**RFMDS**—Red Flag Measurement and Debriefing System  
**RMD**—Radar Missile Defense  
**ROE**—Rules of Engagement (Combat only)  
**RTM**—RAP Tasking Memorandum  
**RTRB**—Realistic Training Review Board  
**S/A**—Surface-to-Air  
**SA**—Strategic Attack  
**SABC**—Self Aid Buddy Care  
**SAM**—Surface to Air Missile  
**SAR**—Search and Rescue  
**(N)SAT**—(Night)Surface Attack Tactics  
**SCAR**—Strike Coordination and Reconnaissance

**SCL**—Standard Conventional Load  
**SEAD**—Suppression of Enemy Air Defenses  
**SELO**—Stan/Eval Liaison Officer  
**SEPT**—Situational Emergency Procedure Training  
**SFO**—Simulated Flameout  
**SI**—Simulator Instructor  
**SIM**—Simulator (MRT, FMS)  
**SOF**—Supervisor of Flying, Special Operations Forces  
**SOS**—Squadron Officer School  
**SPINS**—Special Instructions  
**SQ/CC**—Squadron Commander  
**T/O**—Take-Off  
**TAC**—Tactical  
**TACP**—Terminal Air Control Party  
**TACS**—Theater Air Control System  
**TDY**—Temporary Duty  
**TES**—Tactics Eval Sq/Test &Evaluation Squadron  
**TF-Coded**—Designated Training Aircraft  
**TFI**—Total Force Integration  
**TI**—Tactical Intercept  
**TIC**—Troops In Contact  
**T.O.**—Technical Order  
**TOT**—Time Over Target  
**TR**—Training Rules  
**TRSS**—Training Support Squadron  
**TST**—Time Sensitive Target  
**TTL**—Training Task List  
**TTP**—Tactics, Techniques and Procedures  
**TX**—Transition  
**UCML**—Unit Committed Munitions List  
**UIP**—Upgrading Instructor Pilot  
**UMD**—Unit Manning Document

**UP**—Upgrade Pilot

**USAF**—United States Air Force

**USAFE**—United States Air Forces in Europe

**USAFAWC**—United States Air Forces Air Warfare Center

**USAFWS**—United States Air Force Weapons School

**USAFWTC**—United States Air Forces Weapons Test Center

**USI**—Upgrading Simulator Instructor

**VID**—Visual Identification

**WCMD**—Wind Corrected Munitions Dispenser

**WD**—Weapons Delivery

**WG**—Wing

**WIC**—Weapons Instructor Course

**WS**—Weapons School

**WVR**—Within Visual Range

**WX**—Weather

### *Terms*

**Air Combat Training (ACBT)**—A general term which may include (D)BFM, (D)ACM, and (D)ACT. Accomplishment of this event requires visual maneuvering against an airborne adversary. Limited/Unlimited TRs (IAW 11-214) are not a litmus test for the accomplishment of ACBT. The prefix (D) refers to dissimilar assets. When the prefix is missing, similar is assumed as flown/required. When present in parenthesis, dissimilar is optional. When present without parenthesis, dissimilar is assumed flown or required. This convention corresponds to all facets of ACBT (i.e., BFM, ACM, ACT).

**Air Combat Tactics (ACT)**—Training in the application of offensive and defensive maneuvering to achieve a tactical air-to-air objective. Defensive Counter Air (DCA), Offensive Counter Air (OCA), Force Protection (FP) and other A/A centric missions that include element/multi-ship blue tactics are examples of ACT. Limited/Unlimited TRs (IAW 11-214) are not a litmus test for the accomplishment of ACT.

**Basic Mission Capable (BMC)**—The status of a pilot who has satisfactorily completed training (MQT) prescribed to be fully qualified to perform the basic unit operational missions but does not maintain CMR status. Pilot accomplishes training required to remain familiarized in all, and may be qualified and proficient in some, of the primary missions of their weapon system and unit. These pilots may also maintain special capabilities (refer to paragraph 4.3).

**Basic Aircraft Qualification (BAQ)**—A status of a pilot who has satisfactorily completed training prescribed to maintain the skills necessary to fly the unit aircraft. The member must perform at the minimum frequency necessary to meet the most recent sortie and flight standards set for the weapons system. Pilots are considered as BAQ until completion of MQT and assignment to BMC/CMR. BAQ is not a permanent qualification except for General Officers

(GO) above the wing level, and any other crew members specifically authorized by MAJCOM/A3. Pilots are authorized to perform certified missions/events without instructor pilot or SQ supervisor supervision. Flight duties will be limited to those identified in paragraph 4.3

**Certification**—The process of certifying pilot tactical employment and special weapons capabilities, procedures, and rules. Replaces verification for nuclear tasked units.

**Combat Mission Ready (CMR)**—A status of a pilot who has satisfactorily completed training (MQT) prescribed to be fully qualified to perform the basic unit combat missions, and maintains qualification and proficiency in these missions. In CC-coded units, all active duty API-1/2's, Squadron Commander, Operations Officers, and OG/CC designated API-6 manning positions are required to maintain this qualification level. Exception: If a unit is over-manned, they may elect to train the front line of their UMD to CMR with the overage designated as BMC. Approximately 50% of the pilots selected for CMR must be inexperienced (refer to paragraph 4.3).

**Continuation Training (CT)**—Training to maintain proficiency and improve pilot capabilities to perform unit missions (does not include formal syllabus or test plan missions). Applicable to all pilots.

**Currency**—The minimum frequency required to perform a mission, sortie, or an event safely.

**Delivery Parameters**—Data reflecting current delivery considerations for general purpose ordnance as well as tactical survivability. Appropriate aircraft/ weapons Technical Orders (T.O.) must be consulted for live ordnance safe escape criteria and -1 performance charts for recovery altitudes.

**Emergency Procedures Evaluation (EPE)**—An evaluation of pilot knowledge and responsiveness to critical and non-critical EPs conducted by an FE in an MRT, FMS, or aircraft cockpit.

**Experienced Aircrew (EXP)**—See paragraph 1.5.5

**Flight Lead (FL)**—As designated on flight orders, the individual responsible for overall conduct of mission from preflight preparation/briefing to postflight debriefing, regardless of actual position within the formation. A certified 4-ship FL may lead formations and missions in excess of four aircraft, unless restricted by the unit CC. A 2-ship FL is authorized to lead an element in a larger formation.

**Full Scale Weapons Delivery (FSWD)**—Delivery of live or inert ordnance representing a typical combat configuration/SCL of guided munitions in a tactical scenario.

**Helmet-Mounted Display (HMD)**—An advanced visor and helmet system that can display Heads-Up Display information on the inside of the pilot's visor.

**Initial Qualification Training (IQT)**—Training to qualify the pilot in basic aircraft flying duties without specific regard to a unit operational mission. The minimum training requirement for Basic Aircraft Qualification (BAQ).

**Limited-Threat VID**—Visual identification of a bogey in a limited threat environment (i.e. counter-drug operations, North American Air Defense (NORAD) procedures, etc.) IAW AFTTP 3-1.

**Low Altitude Training (LOWAT)**—Operations in a certified low altitude block as defined in **Table 6.1** Currency associated with and updated by either LOW A/A or LOW A/G.

**Low Altitude Tactical Formation (LATF)**—Flying tactical formation while conducting LATN training.

**Low Altitude Tactical Navigation (LATN)**—Training conducted below 1,000 feet AGL using onboard systems and the fundamental aspects of dead reckoning and point-to-point low altitude navigation, with or without prior route planning.

**Low Altitude Intercept (LAI)**—An intercept conducted below 5,000 feet AGL.

**Medium Altitude Tactics.**—Day or night (if appropriate for night mission profiles) tactical formation above 5,000 feet AGL, ingressing to a target area, employing actual or simulated ordnance, and egressing with mutual support.

**Mission Qualification Training (MQT)**—Training required to achieve a basic level of competence in unit's primary tasked missions. This training is a prerequisite for CMR or BMC status.

**Night Sortie.**—Sortie on which either takeoff or landing and at least 50 percent of flight duration or 1 hour, whichever is less, occur between the end of evening civil twilight and the beginning of morning civil twilight, as published in the *American Air Almanac*, converted to local time. Once trained and equipped, all night sorties should include the use of DAS. All DAS aided missions should include covert/lights out training.

**Primary Aerospace Vehicle Authorized (PAA)**—Aircraft authorized for performance of the unit's mission (e.g., Combat, Combat Support, Training, Test and Evaluation, etc.). The PAA forms the basis for the allocation of operating resources, to include manpower, support equipment, and flying hour funds. The operating command determines the PAA required to meet their assigned missions. (See AFI 16-402, *Aerospace Vehicle Programming, Assignment, Distribution, Accounting, and Termination.*)

**Primary Aerospace Vehicle Inventory (PAI)**—Aircraft assigned to meet the PAA.

**Proficiency**—Demonstrated ability to successfully accomplish tasked event safely and effectively. For purposes of this instruction, proficiency also requires currency in the event.

**SCAR**—Mission flown to control, as a minimum, two independent attacks by fighters on or off range with actual or simulated ordnance against lucrative targets identified and validated in specified geographic locations. Mission elements include: Target area reconnaissance and target identification, C3I network interface, SCAR-to-fighter brief, target marking and fighter hand-off, neutralization of enemy air defenses, BDA, and INFLTREP. Formerly called Killer Scout.

**SEAD**—A tactical event employing simulated or actual munitions to suppress any portion of a simulated IADS, to include SAMs, Anti Aircraft Artillery (AAA), and GCI systems.

**Situational Emergency Procedures Training (SEPT)**—A discussion and review of abnormal/emergency procedures and aircraft systems operations/limitations based on realistic scenarios.

**Specialized Training**—Training in specialized tactics, weapons systems, or flight responsibilities such as FL, IP, LASDT, etc. This training may be conducted in MQT or CT, as required.

**Squadron Supervisor**—SQ/CC, SQ/DO, SQ/ADO, and Flight CCs. ARC: As designated by the OG/CC.

**Tactical Intercept**—A single/multi-ship intercept performed to accomplish the tactical objective (ID or kill the threat) in a realistic threat scenario. Fighter should counter threat maneuvers and weapons engagement zones, consider environmental factors, attain end game turning room and energy, practice ID/ROE procedures, take valid shots if presented, and terminate when briefed objectives or training rule stops are reached. One event may be logged per engagement.

**Target Mark**—A tactical weapon delivery used in conjunction with final air strike control.

**Threat VID**—Visual identification of a bogey in a threat environment IAW AFTTP 3-1.

**Time Sensitive Target (TST)**—An unplanned (as defined in JP 3-60 Targeting) target requiring immediate response. Targets should be both mobile and fixed. The attacking aircraft should receive target data/description and “tasking” from an appropriate command and control (C2) asset. Use of Combat Reporting Center (CRCs), AWACS, JSTARS, AOC, RPA, TACP, FAC or a simulation thereof is required. Scenarios should include standard fire support control measures utilizing standard J-fire terminology for clearance of fires in a dynamic environment. Data/description can be via datalink or normal radio communications. Although the target is unplanned, Positive Target Identification (PID), Collateral Damage Estimates (CDE), deconfliction and basic attack procedures must be thoroughly briefed.

**Verification**—Applies to procedure aimed at verifying and refreshing pilot tactical employment knowledge, emphasizing conventional operations and mobile targets. Verification is conducted in both initial and follow-on phases. Initial verification phase is a formal board proceeding convened to verify individual pilot knowledge. Continuation training is to reinforce, refresh, and update pilots on unit wartime mission/tasking, tactics, and procedures.

**Visual Identification (VID)**—Often required to positively identify an aircraft using visual means.

**Visual Reconnaissance**—An event using basic navigational techniques during which surveillance of an area or lines of communication is conducted, leading to the timely acquisition of information or enemy activities. It encompasses map reading, recognition of terrain features, pilotage, and DR. Only two events may be logged per mission.

**Weapons Delivery (WD)**—Simulated or actual expenditure of weapons in a tactical scenario.

**Weapons and Tactics Trainer**—A PTT device used primarily for war fighting tasks, and skill integration training (see AFI36-2211, *Management of Air Force Training Systems*)).

## Attachment 2

### GLOSSARY OF MISSION/SORTIE AND EVENT DEFINITIONS

#### A2.1. Mission/Sortie/Event Definitions:

A2.1.1. **4-Ship Flight Lead (4FL) Mission.** Special capability mission. Mission where FL led a flight of four or more. May be logged in conjunction with baseline training requirements.

A2.1.2. **4-Ship A/A Employment Event.** Offensive or defensive A/A employment as a 4-ship minimum against at least one red air. May include (but is not limited to): opposed 4-ship SAT, DCA (4vX), OCA-A(4vX), Force Protection, etc.

A2.1.3. **ACMI Event.** An event which utilizes an ACMI range/facilities for flight and debrief (to include ACTS, RFMDS, Personal computer debriefing system (PCDS) and P4/5RC, etc.). Only one event may be logged per mission.

A2.1.4. **ACM Mission.** ACM training is designed to prioritize flow priorities and signature management to achieve proficiency in element and single-ship maneuvering and the coordinated application of BFM to achieve a simulated kill or effectively defend against one or more aircraft from a pre-planned starting position.

A2.1.5. **Air Strike Control (ASC) Event.** A control performed by the FAC(A) element lead, passing attack (9-line) information and performing Type 1, 2, or 3 control duties. Two controls are required to update an ASC event. The controls do not have to occur on the same mission. A control consists of at least one aircraft attacking a surface target. The control begins with a CAS briefing from a FAC(A) and ends with either an actual/simulated weapons release or an abort on a final attack run. No more than two controls can be counted per CAS briefing per target. Air strike control (ASC) events only apply to FAC(A) qualified pilots and are IAW JCAS FAC(A) MOA (dated 24 Mar 05). Track each ASC performed by type as applicable (see definition below) for JCAS FAC(A) MOA documentation requirements. Only applies to FAC(A) qualified pilots when performed as the FAC(A) element lead. FAC(A)s will satisfy their requirements with ground units or TACPs whenever possible.

A2.1.6. **Aircraft Handling Characteristics (AHC) Mission (ANG: Event).** Basic skills mission. Training for proficiency in utilization and exploitation of the aircraft flight envelope, consistent with operational and safety constraints, including, but not limited to high/maximum AOA maneuvering, energy management, minimum time turns, maximum/optimum acceleration and deceleration techniques, and confidence maneuvers. Instrument/AHC missions may be applied to monthly lookback at a maximum of one of either per month (3 for 3 month lookback) (ANG: N/A).

A2.1.7. **Air-to-Air Refueling (AAR) Event.** An AAR event requires tanker rendezvous, hook-up and transfer of fuel or 2 minutes of dry contact. More than one event may be credited if receivers accomplish another rendezvous, hook-up and fuel transfer/dry hook-up.

A2.1.8. **Alert Scramble Event.** From an alert posture, launch on a scramble order in any tasked role. Simulated event may terminate after initial taxi. Only one event may be logged per sortie.

A2.1.9. **Attrition Sortie.** Programming tool used to forecast future flight hour and sortie requirements. Attrition sorties are derived from historical data (weather, sympathetic, maintenance, etc.) and used to account for sorties cancelled before flight. Launched sorties cannot be considered attrition (see Non-effective Sortie definition).

A2.1.10. **BFM Mission.** Building block mission. BFM (1 v 1) Training designed to apply aircraft handling skills to gain proficiency in recognizing and solving range, closure, aspect, angle off, and turning room problems in relation to another aircraft to either attain a position from which weapons may be launched, or defeat weapons employed by an adversary.

A2.1.11. **CAS Mission.** Mission flown in support of ground forces (actual or simulated) under the control of a FAC or JTAC providing air strike control for the fighter attacks. Mission elements include: Intel scenario and tactical mission planning, execution against actual or simulated threats, simulated or actual weapons employment against designated targets while under positive control of a FAC(A) or JTAC interfacing (actual or simulated) with the TACS/AAGS C2 network, and INFLTREP. Excess night missions may be applied to day requirements. All night missions should include the use of DAS. All DAS aided missions should include covert/lights out training.

A2.1.12. **Collateral Sortie.** Sortie not directly related to combat employment or basic skills training but necessary for accomplishment of unit training programs, such as ferry flights, deployments, hurrevac, airshows, etc. MAJCOMs will normally assign collateral sorties in lump sum (nominally 200 per fighter unit) adjusted for local conditions and circumstances (see paragraph 1.7.2). Tactical events accomplished on collateral sorties may be logged and used to update currencies but may not be logged as RAP missions or count towards RAP lookback requirements.

A2.1.13. **Commander Option/AEF Prep Mission.** Mission allocated at the beginning of each training cycle by the unit commander based on DOC requirements or AEF commitments. Allocate for CMR pilots to meet individual training requirements and unit training objectives. Allocate for BMC pilots to meet the BMC definition and support squadron training requirements. CMR pilots may log any type RAP mission, with the exception of a Red Air, Instruments, or AHC.

A2.1.14. **Composite Force Training (CFTR) Event.** Scenarios employing multiple flights of aircraft, each under the direction of its own flight leader, acting in a large-force employment (LFE) scenario to achieve a common tactical objective. Scenarios should be opposed by air and surface threats and should include at least 8 blue aircraft. Only one event may be logged per mission.

A2.1.15. **Contingency Sortie.** A sortie tasked and flown while deployed for a contingency operation. These sorties are logged as Contingency Operations Sortie (SC13) in ARMS. These sorties and events accomplished on these sorties do not count towards training cycle RAP requirements, however, the sorties may be used for lookback and the events may be used to update currencies.

A2.1.16. **DAS LOW ALT Event.** (ANG: N/A)- Event is defined as performing realistic, mission oriented low altitude DAS operations below the MSA during high-illumination. Events include low altitude navigation, tactical formation, defensive maneuvering to avoid or negate threats, and Air-to-Ground attacks.



A2.1.17. **Defensive Counter Air (Night) [(N)DCA] Mission.** Mission designed to develop proficiency in DCA mission tactics. Mission elements include: Intel scenario and mission planning, execution of tactics to detect, engage, and negate aircraft employing adversary tactics and weapons capabilities to penetrate protected airspace or attack a specific target area, and in-flight report. Emphasis on signature management and flow priorities. Additional night missions may be applied to day mission requirements. All night missions should include the use of DAS. All DAS aided missions should include covert/lights out training.

A2.1.18. **Demanding Sortie.** Sorties that task the pilot to the extent that flying frequency and continuity are most critical. Authorized missions/events requiring demanding sortie currency are: BFM, ACM, ACT, LOW A-A or A-G (below 1,000 feet AGL), CAS, Opposed SAT, CFTR, night missions, instructor duties, aerial demonstrations, etc. SQ/CCs may add missions/events to the demanding sortie list, depending on unit tasking and the individual's capabilities. Also see Non-demanding Sortie.

A2.1.19. **Destruction of Enemy Air Defenses (DEAD) Mission.** Mission designed to develop proficiency in DEAD tactics. Mission elements include: Intel scenario and integrated mission planning to support force package objectives, execution of tactics to detect and destroy (utilizing conventional, IAM, or LGB munitions) enemy IADS, to include SAM, AAA systems, and critical IADS nodes, employing adversary tactics and weapons capabilities to disrupt force package employment/destroy package assets, and in-flight report. Destructive suppression effects are cumulative, resulting in reduced attrition of friendly aircraft. Destructive operations should be integrated and used with disruptive operations.

A2.1.20. **Dynamic Targeting (DT) A/A Event.** Complete an air-to-air intercept/engagement against a target relayed/passed by an appropriate command and control (C2) asset. Track information should be a datalinked (J 3.2 track) if possible, otherwise via normal radio communications (C2 asset and relay/passing of track information can be simulated). Only two events may be logged per mission.

A2.1.21. **DT A/G Event.** Complete an air-to-ground attack/engagement against a target/(TST relayed/passed by an appropriate C2 asset. Track information should be a datalinked (J 3.5 track) if possible, otherwise via normal radio communications (C2 asset and relay/passing of track information can be simulated). Targeting within a CAS scenario does not meet the intent of this event. Only two events may be logged per mission.

A2.1.22. **Electronic Attack (EA) A/A Event.** An intercept performed against a target using active and/or passive electronic protection (EP) against attacker's radar, causing the attacker to employ EA techniques or tactics. Does not include co-channel interference. Only one event may be logged per engagement.

A2.1.23. **Element A/A Maneuvers Event.** Formerly ACT (2v2) min. Accomplishing an A/A tactical event as Blue Air that requires element deconfliction, contract adherence, and formation maneuvering with emphasis on signature management. This may include (but is not limited to): ACM (as blue), element drag-press-attack, WEZ in depth maneuvers to VID, Skate/Banzai tactical execution, etc. Minimum of 2 in the blue element opposed by multiple groups or single multi-ship group.

A2.1.24. **EP A/A Event.** The pilot detects an airborne threat via electronic means and reacts with appropriate maneuvers, electronic countermeasures (ECM) switchology, and/or

expendables. Airborne threat training will be accomplished only with a dedicated adversary attacking from BVR. Only one event may be logged per engagement.

A2.1.25. **EW Range Event.** Inflight operations conducted on an EW range with fixed or mobile surface-to-air emitters operating and detection/threat reaction emphasized. Normally accomplished in conjunction with other EW-type events. The pilot detects a surface threat via electronic means and reacts with appropriate maneuvers, pod/internal EP switchology and/or expendables. Missions flown against EW Aggressor or mobile threat emitters placed in a MOA, range, or along a low level route are acceptable. Only one EW range event may be logged per mission (Active EA must be used).

A2.1.26. **Flag Exercise Event.** Missions flown in formal MAJCOM-sponsored exercises (i.e. Red Flag, Green Flag, etc.). Flag events will include operations with Full Scale Inert/Live ordnance (see 5.6).

A2.1.27. **Flare Event.** Inflight release of self-protection flares during a tactical mission profile as a threat response. Event requires actual release and is limited to logging of one event per engagement. A normal event will be considered 15 flares, but 1 flare expended will satisfy the event requirement.

A2.1.28. **FAC(A) Mission.** Special capability mission designed to develop proficiency in airborne forward air control of armed attack fighters in support of actual or simulated ground forces, and can be flown as element lead or the supporting wingman (if FAC(A) qualified). Mission elements include: intel scenario and mission planning, actual or simulated interface with TACS/AAGS C2 network, target acquisition and identification, FAC-to-fighter brief, target marking, positive control (Type 1, 2, or 3) of ground attack fighters employing simulated or actual ordnance against designated targets, integration of ground and heliborne fire support elements (if available), identification and neutralization of enemy air defenses, BDA, and INFLTREP. FAC(A) missions may be counted towards CAS or Commander Option mission requirements. Within a FAC(A) mission are ASC events and currency requirements.

A2.1.29. **Instructor Pilot (IP) Mission.** Special capability mission. Instructors will log an IP mission when acting in an instructor capacity to update IP currency. IP missions may be dual-logged with any other RAP mission or special capability missions.

A2.1.30. **Instrument Mission (ANG: N/A).** Basic skills mission. Training designed to ensure instrument proficiency. RAP events may be accomplished on an instrument mission provided accomplishment does not interfere with the primary goal of instrument training. Units are allocated flying hours for every pilot to accomplish their minimum basic skill requirements. Priority for this type of mission should be strange field approach training. Instrument/AHC missions may be applied to monthly lookback at a maximum of one of either per month (3 for 3 month lookback). Instrument missions logged in the MRT/FMS must have an IP or SIM-IP running the IOS and critiquing performance.

A2.1.31. **J-SEAD Mission.** SEAD mission integrating non-F-35A assets operating in support of the SEAD role. Assets include, but are not limited to, RC-135 Rivet Joint, EA-6B, EP-3, ECR Tornado, etc.

A2.1.32. **LOW A/A Event.** An event defined as performing realistic, mission-oriented A/A operations while below 1000' AGL to the pilot's qualified minimum altitude block (see

**Table 6.1).** The event includes skills necessary to search for, and engage offensively, an aerial target at low altitude. Only one event may be logged per mission. Accomplishing this event updates LOWAT currency.

**A2.1.33. LOW A/G Event.** An event defined as performing realistic, mission-oriented low altitude operations while below 1000' AGL to the pilot's qualified minimum altitude block (see **Table 6.1**). The event includes low altitude navigation, tactical formation, defensive maneuvering to avoid or negate threats, and A/G attacks. Only one event may be logged per mission. Accomplishing this event updates LOWAT currency.

**A2.1.34. Low/Slow Speed Threat VID Intercept Event.** Tactical intercept performed to accomplish the tactical objective (ID the bogey, ID and kill the bandit, etc) on a target below 5000 feet AGL with airspeed less than 250 KIAS. Fighter should counter threat maneuvers and weapons engagement zones, consider environmental factors, attain turning room and energy at end game, practice ID/ROE procedures, and terminate when briefed objectives or training rule stops are reached. These intercepts will not update ACBT currency. Two events may be logged per mission, but not on the same engagement.

**A2.1.35. Moving Target LGB Attack Event.** Self or buddy-laser LGB attack against a target in motion. Until AFTTP 3.1 hit criteria is available, units will develop simulated ordnance hit/miss criteria using available weapons publications (e.g. Jedi Knight Phase 3 report, TTPs in development, and USAFWS papers).

**A2.1.36. Moving Target Strafe Event.** Tactical strafe attack against a target in motion. Both HAS and LAS are desired. Until AFTTP 3.1 hit criteria is available, units will develop simulated ordnance hit/miss criteria using available weapons publications. (e.g. Jedi Knight Phase 3 report, TTPs in development, and USAFWS papers).

**A2.1.37. Mission Commander (MCC) Mission.** Special capability mission. Mission where the pilot acted in the capacity of a MCC for a joint/composite mission responsible for two or more types of aircraft with four or more total aircraft, or more than four own MDS aircraft versus a minimum of two pre-planned adversary aircraft. May be logged in conjunction with baseline training requirements.

**A2.1.38. Non-demanding Sortie.** A day sortie that provides the pilot with the opportunity to regain basic flying proficiency without excessively tasking those skills that have been under used during the non-flying period. Authorized events flown on a non-demanding sortie are: Instruments, AHC, low level navigation at or above 1000 feet AGL, basic WD and basic intercepts (not to exceed 2v2). SQ/CCs may delete sorties/events from this non-demanding sortie list, depending on unit tasking and the individual's capabilities.

**A2.1.39. Non-effective Sortie.** A sortie planned and launched as a training mission, test mission, basic skills sortie, or collateral sortie that, due to some circumstance (WX, IFE, maintenance, etc.), fails to accomplish a sufficient number of planned events. While maintenance statistics support historical data for sorties that are cancelled before takeoff, a non-effective sortie or "air abort" is not usually captured by maintenance for future FHP. These sorties must be accounted for in building unit flying hour programs.

**A2.1.40. OCA-A Mission.** Mission designed to develop proficiency in OCA-A tactics. Mission elements include: Intel scenario and tactical mission planning, execution of striker escort and sweep tactics designed to detect, engage, and negate simulated adversary aircraft

which are operating within specific commit criteria (i.e., range, airspace corridor, vul time, etc.), and in-flight report. Emphasis on signature management and flow priorities.

A2.1.41. **Red Air Mission.** A/A mission where tactics, aircraft simulation, weapon systems, and/or maneuvering is limited to the extent that complete own MDS training is not accomplished. Restrictions which limit aircraft capabilities to some level which might be encountered in combat do not require logging the mission as Red Air. For CMR pilots, Red Air mission allocations in the RTM are a maximum cap on degraded training. Red air missions flown above max allocation do not count toward RAP mission requirements/lookback. However, CMR pilots may accomplish individual events (e.g. formation landing, AAR, etc.) and update applicable currencies. Unused Red Air allocations should be flown in one of the other A/A training mission categories.

A2.1.42. **SEAD Mission.** Mission designed to develop proficiency in SEAD tactics. Mission elements include: Intel scenario and integrated mission planning to support force package objectives, execution of tactics to detect and negate enemy IADS, to include SAM, AAA systems, and critical IADS nodes, employing adversary tactics and weapons capabilities to disrupt force package employment/destroy package assets, and in-flight report. Emphasis on signature management and flow priorities.

A2.1.43. **Secure Voice Event.** Requires proper radio configuration during tactical mission accomplishment. Only one event may be logged per sortie.

A2.1.44. **Slow Shadow Event.** Intercepting slow flying aircraft (rotary or fixed wing) and maintaining surveillance without being detected.

A2.1.45. **Surface Attack Tactics (Night) [SAT-(N)] Mission.** Mission designed to develop proficiency in SAT. Mission types include Strategic Attack (SA), Air Interdiction (AI), and Offensive Counter Air-Surface (OCA-S). Mission elements include: Intel scenario and tactical mission planning, execution against actual or simulated threats, simulated or actual WD against a tactical target, and INFLTREP. Simulated attacks may be conducted against realistic targets IAW local restrictions. Emphasis on signature management and flow priorities. Additional night missions may be applied toward day requirements. All night missions should include the use of DAS. All DAS aided missions should include covert/lights out training.

A2.1.46. **Terminal Attack Control with SOF Event.** Emphasis on this event is SOF interoperability and support during non-traditional CAS missions. Training requires scenario development, terminal attack, and brief/debrief with SOF personnel. One event, culminating in actual or simulated weapons release, may be logged per target.

A2.1.47. **Terminal Attack with EOTS Event.** These training events integrate EOTS with the terminal attack of a CAS target. EOTS use includes target identification, designation, tracking, and weapons guidance. Requires JTAC/FAC(A) control culminating in actual or simulated weapons release.

A2.1.48. **Urban Target Attack with EOTS Event.** Training in urban environments emphasizes target identification, attack axis limitations, and avoiding collateral damage, in close proximity to and coordination with friendly forces. One event, culminating in actual or simulated weapons release (IAM, LGB), may be logged per target.

A2.1.49. **Urban Target Strafe Event.** Training in urban environments emphasizes target identification, attack axis limitations, and avoiding collateral damage, in close proximity to and coordination with friendly forces. One event, culminating in actual or simulated weapons release, may be logged per target. Both LAS and HAS are desired.

## A2.2. Weapons Employment Terms:

A2.2.1. **Dry Pass.** Weapons delivery pass during which no ordnance is expended. [A2.2.4 Familiarization \(FAM\)](#). See [Chapter 5](#).

A2.2.2. **Foul.** A penalty directed to a specific aircraft and crew for actions inconsistent with established procedures or safety considerations. Verbal warnings will not be substituted for fouls. A second foul or any dangerous pass will result in mandatory expulsion from any further deliveries during that mission and a gross error score for the event. A foul will be charged IAW flying directive publications.

A2.2.3. **Hit.** Any munitions impact within the weapons criteria established for that event.

A2.2.4. **Inadvertent Release.** Ordnance which has released without command by the pilot or by a verified system malfunction. Impact will not be scored.

A2.2.5. **Multiple Release.** More than one weapon released against the same target on a single pass.

A2.2.6. **No Spot.** A weapons release during which no impact was observed. No score or error will be assigned.

A2.2.7. **Qualification QUAL.** See [Chapter 5](#).

A2.2.8. **Tactical Delivery.** A delivery using patterns and techniques that minimize final flight path predictability, yet allow sufficient time for accurate WD. Wings level time on final will be limited to 5 seconds or less when aircraft will descend below 4,500 feet AGL. Timing will be from completion of roll-out until initiation of recovery. Level, IAM, LGB, and climbing deliveries may exceed 5 seconds. All tactical deliveries will normally include recovery to egress parameters.

A2.2.9. **Unintentional Release.** Ordnance released due to pilot error. Will be scored as gross error regardless of impact point.