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**COCKPIT/CREW RESOURCE
MANAGEMENT AND THREAT &
ERROR MANAGEMENT PROGRAM**

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This publication implements Air Force Policy Directive (AFPD) 11-2, *Aircrew Operations*, Air Force Instruction (AFI) 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure*, and is consistent with AFPD 11-4, *Aviation Service*. It establishes the Air Force Cockpit/Crew Resource Management and Threat & Error Management (CRM/TEM) Program. This publication is applicable to all civilian employees and uniformed members of the Regular Air Force, Air Force Reserve (AFR), and Air National Guard (ANG). This publication does not apply to the United States Space Force. Ensure all records generated as a result of processes prescribed in this publication adhere to Air Force Instruction 33-322, *Records Management and Information Governance Program*, and are disposed in accordance with the Air Force Records Disposition Schedule, which is located in the Air Force Records Information Management System. Submit suggested changes to this publication on Air Force (AF) Form 847, *Recommendation for Change of Publication*, through the chain of command, to AF/ACTF, usaf.pentagon.af-a3.mbx.actf-workflow@mail.mil. Major commands (MAJCOMs), direct

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(ACC) Air Force Manual (AFMAN) 11-290, *Cockpit/Crew Resource Management and Threat & Error Management Program* (CRM/TEM) is supplemented as follows: This supplement applies to ACC units only. This supplement does not apply to Air National Guard (ANG) and Air Force Reserve Command (AFRC) units and members. This publication requires the collection and or maintenance of information protected by the Privacy Act of 1974 authorized by Title 10, United States Code (USC) Section (§)9013, *Personnel Files*. The applicable System of Records Notice (F011 AF XO A) INGB 004 Joint Services Support System is available at: <https://dpcl.d.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/569691/f011-af-xo-a/>. Ensure all records generated as a result of processes prescribed in this publication adhere to AFI 33-322, *Records Management and Information Governance Program*, and are disposed in accordance with the Air Force Records Disposition Schedule, which is located in the Air Force Records Information Management System. Send comments and suggested improvements to this supplement on Department of the Air Force (DAF) Form 847, *Recommendation for Change of Publication*, through training channels, to Air Combat Command Training Support Squadron Acquisitions Flight (ACC TRSS/ACQ), acctrss@us.af.mil. This publication may be supplemented at any level, but all direct Supplements must be routed to the Office of Primary Responsibility (OPR) of this publication for coordination prior to certification and approval. The authorities to waive wing/unit level requirements in this publication are identified with a Tier (“T-0, T-1, T-2, T-3”) number following the compliance statement. See DAFMAN 90-161, *Publishing Processes and Procedures*. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the publication OPR for non-tiered compliance items. All compliance items in this supplement are annotated at the “T-3” level only.

SUMMARY OF CHANGES

This document has been substantially revised and needs to be completely reviewed. Major changes include the addition of Threat and Error Management (TEM) requirements under the umbrella of the CRM/TEM Program.

(ACC) This supplement provides updated information based on the changes made in AFMAN 11-290. Changes include the addition of Threat and Error Management (TEM) requirements under the umbrella of the CRM/TEM Program. The updates also reflect administrative changes, organization name changes and prescribed format requirements.

Section A—Cockpit/Crew Resource Management and Threat & Error Management (CRM/TEM)	
Program Description	3
1. Overview.....	3
1. (ACC) Overview.....	3
2. Roles and Responsibilities.....	4
3. Program Requirements.....	5
Figure 1. CRM/TEM Program Model.....	7
Table 1. (Added-ACC) Aircrew Grade Sheet Requirements.....	10
Table 2. (Added-ACC) Instructor Brief/Debrief Guide.....	11
4. Supporting Information.....	15
Section B—CRM/TEM Program Administration	16
5. Air Force Oversight.....	16
5. (ACC) ACC.....	16
Attachment 1—GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION	21

Section A—Cockpit/Crew Resource Management and Threat & Error Management (CRM/TEM) Program Description

1. Overview. The Air Force CRM/TEM program provides crewmembers with performance-enhancing knowledge and skills directly applicable to their roles in the mission of the Air Force. CRM/TEM Program training is a key component of a combined effort to identify and manage threats to ensure safe and effective mission operations. CRM/TEM Program training begins with crewmembers’ initial Air Force flying training and is continuously built upon throughout their operational careers. Training objectives are tailored to the knowledge and skill level of the crewmember. CRM/TEM Program training should emphasize performance skills more than academic objectives as the crewmember becomes more proficient.

1. (ACC) Overview. At its simplest, CRM/TEM is "things aircrews do." Successful CRM/TEM training is designed to enable crews to manage resources and tasks and to improve mission performance. Quality skill practice and training leading to maximum operational effectiveness and combat capability is the central theme of Air Combat Command’s (ACC's) CRM/TEM training program. Five different CRM courses (outlined in paragraph 4 of AFMAN 11-290, as supplemented) are the keystones of an integrated program that provides operationally oriented repetitive practice in the use of CRM/TEM skills. TEM is the overarching process used to apply CRM skills to achieve mission success. Each course is built around a CRM/TEM skill/practice opportunity that motivates the combat crewmember to use a core CRM/TEM curriculum skill and provides feedback on the use of that skill.

1.1. CRM/TEM Program Purpose. The CRM/TEM Program focuses on the effective utilization of all appropriate and available resources as countermeasures to operational threats and human errors so as to ensure mission success. CRM and TEM are independent, yet also

interdependent. CRM emphasizes how flight and crewmembers communicate, manage resources, and make decisions. TEM emphasizes effective management and communications regarding operational threats and human errors. Crewmembers must be proficient in CRM and TEM skills. Safe and effective operations are achieved when CRM/TEM Program skills and technical expertise are employed together.

1.2. **Goals.** The CRM/TEM Program goals are:

1.2.1. Maximize operational effectiveness and combat capability.

1.2.2. Preserve personnel and material resources.

1.2.3. Ensure the safety of non-combatant civilians and friendly forces.

1.2.4. Facilitate mishap reduction by providing skills, processes, tools, and techniques to aircrew members to effectively identify threats and mitigate errors in aviation operations.

1.3. **Objectives.** Design and manage CRM/TEM Program training to accomplish the following objectives:

1.3.1. Develop aircrew understanding and proficiency of human factors skills to cultivate a safe and effective operational environment while accomplishing mission requirements.

1.3.2. Develop aircrew skills and strategies in recognizing and responding to threats and aircrew errors to prevent conditions that may lead to mishaps.

1.4. **Waivers.** Unless otherwise specified or tiered, the Deputy Chief of Staff for Operations, Director of Training and Readiness (AF/A3T) is the waiver authority for the provisions of this publication. Route waivers through applicable channels to MAJCOM/A3 (operations or equivalent). As applicable, MAJCOM/A3s will forward requests to AF/A3T, with an info copy to AF/ACTF.

2. Roles and Responsibilities.

2.1. **Headquarters Air Force, Director of Training and Readiness (AF/A3T).** Through the ACTF, manages the CRM/TEM Program and provides resources to implement guidance in this publication.

2.2. Commanders.

2.2.1. MAJCOMs, FOAs and DRUs establish and manage their respective programs in accordance with this publication. MAJCOMs may implement their CRM/TEM Programs as either "Cockpit" or "Crew" Resource Management, based on their respective missions.

2.2.2. Provide proportional funding as necessary to support the lead MAJCOM CRM/TEM Program.

2.3. **Air Force Safety Center (AFSEC).** Provides advice and support to AF CRM/TEM Program Working Group as defined in **Section B** of this publication.

2.4. **CRM/TEM Program Managers.** MAJCOM, FOA, and DRU CRM/TEM Program Managers develop and implement local CRM/TEM Program requirements in accordance with this manual. (T-2) See [paragraph 5.3.1](#).

2.5. **Flight/Crew Members.** Attends CRM/TEM Program training sessions and adheres to established policies and procedures in accordance with this publication. **(T-3)** Lead commands define "crew member" in terms of their own operational mission requirements.

2.5.1. **(Added-ACC)** ACC aircrews, mission crewmembers, Remotely Piloted Aircraft (RPA) crewmembers and aircrew training contract instructor personnel are required to take CRM/TEM continuation training (CT) every 2 years (biennial). CT training will be required by the end of the month, 2 years after receiving previous CRM/TEM training. Aircrews taking the instructor CRM/TEM course will receive credit for CT training requirements. **(T-3)**

2.5.2. **(Added-ACC)** ACC aircrews are identified as any pilot, navigator, combat system officer, non-rated aircrew, flight surgeon, career enlisted aviator, mission crew officer, and enlisted specialist assigned to ACC and assigned flight duties on an ACC weapon system. This includes all staff MAJCOM, Numbered Air Force and wing aircrew members who fly as part of their official duties.

2.6. **Air Education and Training Command** shall ensure aircrew training curricula adheres to guidance in this publication.

3. Program Requirements. Compliance with the CRM/TEM Program is mandatory for aircrew members. **(T-2)**

3.1. **Guidance.** Lead MAJCOMs ensure CRM/TEM Program requirements, currency, tracking, and evaluation guidance are in AFMAN 11-2 mission design series (MDS) specific volumes 1 and 2, in accordance with AFI 11-200. **(T-2)** Ready Aircrew Program (RAP) tasking memo or similar product may provide additional guidance. Guidance includes:

3.1.1. Establishing training frequency, required attendees, and method for tracking crewmember currencies.

3.1.2. Use of AF Form 4031, *CRM/TEM Skills Criteria Training/Evaluation Form*, or MAJCOM/FOA/DRU approved substitute, to establish the skills training/evaluation criteria.

3.1.3. If using a contract vehicle, provide a uniform CRM/TEM Program via a contract vehicle that covers all applicable units to include units gained from AFR or ANG.

3.1.4. **(Added-ACC)** CRM training will be tracked via the Aviation Resource Management System (ARMS). Aircrew members who do not accomplish CRM/TEM training within a 2-year period will be grounded from flying duties until training is accomplished or a waiver is granted for the training. **(T-3)** Waivers to CRM/TEM training will be delegated to no lower than the group commander level.

3.1.5. **(Added-ACC)** Group standardization/evaluation (STAN/EVAL) and/or Group training offices will determine if new aircrew member's previous CRM/TEM training fulfills ACC CRM/TEM training requirements. Aircrews must present documentation of completed CRM/TEM training to Group STAN/EVAL and/or Group training offices for approval. Aircrews and crewmembers can substitute CRM/TEM training received from other MAJCOMs as meeting their biennial ACC CRM/TEM training requirement.

3.1.6. **(Added-ACC)** In the event that simulator CRM/TEM training is not available, flight deck crew members may attend their respective unit's mission crew CRM class.

3.1.7. **(Added-ACC)** Unit instructors and evaluators must document CRM/TEM performance during all simulator and flight training and evaluation missions (i.e., local grade sheets and AF Forms 8 *Certificate of Aircrew Qualification*). Any CRM/TEM trends that have been identified by units (either positive or negative) should be documented and reported to Air Combat Command Standardization and Evaluations Branch (ACC/A3TV) to be incorporated into future CRM/TEM training. **(T-3)**

3.2. **Training Program.** Each MAJCOM, FOA and DRU CRM/TEM Program Training Manager will address the following CRM/TEM Program skills. Skills must be:

3.2.1. Integrated into flight briefings and debriefings. **(T-2)**

3.2.2. Integrated into training syllabi. **(T-2)**

3.2.3. Evaluated during initial qualification and recurring evaluations and assessed during designated CRM/TEM Program training events using the AF Form 4031, or approved MAJCOM substitute. **(T-2)** In addition, the AF Form 4031 will be used as a framework to assess CRM/TEM Program skills and strategies during all aircrew evaluations while using the AF Form 3862, *Flight Evaluation Worksheet*, or MAJCOM approved substitute. **(T-2)**

3.2.4. **(Added-ACC)** ACC's CRM/TEM training program will be data driven, skills-based, and operationally integrated to improve the daily mission performance of ACC combat crewmembers. Data sources should include United States Air Force (USAF) Safety Center data, local standardization and evaluation reports, mission reports, training summaries and grade sheet analysis.

3.3. **CRM/TEM Program Model.** Mission effectiveness and safe operations represent the desired operating environment. As crewmembers encounter operational threats or make errors, there is a potential to move away from the desired operating environment. Unmitigated, the result may be an Undesired State (US)—possibly leading to a mishap. The effective application of CRM/TEM Program skills and strategies creates a proactive pathway, returning crewmembers to mission effectiveness and safe operations. **Figure 1** is a CRM/TEM Program model depicting the interaction and employment of CRM/TEM Program skills.

Figure 1. CRM/TEM Program Model.



3.4. **CRM Core Curricula.** The CRM/TEM Program core curricula includes the following knowledge and skill sets that are to be taught and demonstrated during classroom and simulator training (see AF Form 4031 or approved substitute).

3.4.1. **Mission Analysis** . Includes pre-mission analysis and planning, briefing, ongoing mission evaluation, and post mission debrief. Clearly define mission overview/goals and existing/potential threats or anticipated errors that might adversely affect mission success, along with relevant threat/error mitigation strategies. **(T-2)** Mission analysis instruction will include specific TEM tools and techniques throughout the mission/flight. **(T-2)** Debrief instruction will include aircrew responses and outcomes to threats and errors, giving emphasis to any US that may have occurred. **(T-2)**

3.4.2. **Situational Awareness (SA)** . Includes knowledge and skill objectives for identifying errors, preventing the loss of SA, recognizing the loss of SA, and techniques for recovering from the loss of SA. Recognize the need for action and verbalize/act on unexpected events.

3.4.3. **Communication** . Includes knowledge of common errors, cultural influences, and barriers (rank, age, experience, position, etc.). Skills will encompass listening, feedback, precision and efficiency of communication with all members and agencies (crewmembers, wingmen, weather, air traffic control, intelligence, etc.). Use precise terminology, acknowledge all communications, and ask questions/provide clarification as applicable.

3.4.4. **Risk Management (RM)/Decision Making.** Includes risk assessment, the RM processes (deliberate, real time RM)/tools, breakdowns in judgment and flight discipline, problem-solving, evaluation of hazards, and control measures. Identify contingencies and alternatives, gather all available decision data, and clearly state decisions.

3.4.5. **Crew/Flight Coordination** . Includes the knowledge and skills required within (i.e., internal) and outside the crew/flight members (i.e., external) for mission coordination,

flight/mission integrity contracts, team-building, leadership, command authority, responsibility, behavioral styles, assertiveness, persistence, conflict resolution, hazardous attitudes, legitimate avenues/methods of dissent, and solution driven statements. Adapt as situational demands require, focus attention on task, and ask for inputs.

3.4.6. **Task Management** . Includes establishing priorities, using available resources to manage workload, overload/under-load, complacency, management of automation, checklist discipline, standard operating procedure (SOP), the verbalization of concerns relating to tasks, and the proposal of solutions to known task issues.

3.5. **TEM Core Curricula**. Includes knowledge that TEM is a structured, proactive, systems approach to principles employed using multiple layers of defenses. Recognize and enforce that TEM strategies are intuitive, logical, and flexible, designed to identify, prevent, and mitigate threats and/or trap (allay) inevitable crewmember-made errors. TEM promotes vigilance versus complacency by implementing an active, continuous process of identifying and preparing for threats and identifying and repairing errors at the earliest opportunity. Failing to effectively manage threats or errors negatively influences safe operations, which may lead to US and possible mishaps.

3.5.1. **Threat Identification and Mitigation** . Effective threat identification and mitigation strategies enhance SA and reduce the potential for crewmember error. The appropriate response to a threat is: Identify and Prepare. The earlier threats are identified (both anticipated and unanticipated), the more quickly and effectively they can be managed. Threats not properly identified, or identified but not effectively mitigated, may result in a degradation of safe operations. Effective threat mitigation strategies include: persistently briefing known and anticipated threats along with expected actions, evaluating and confirming current and expected tasks and/or flight progress, effective wingman duties, and adhering to SOP.

3.5.2. **Error Recognition and Mitigation** . Effective error management addresses the negative consequences of human errors, either made by oneself or by another flight/crewmember. Anticipate errors based on task complexity and circumstance. The earlier an error is identified, the more quickly it can be repaired. Effective strategies for error management include: anticipation of errors (e.g., as discussed during mission planning), maintaining awareness of aircraft status and flight/crew actions, appropriate task prioritization, and confirmation of the appropriately selected automation level for the situation. Effective error-countermeasures include continuous employment of flight path management (FPM) concepts, effective pilot monitoring (PM) and crewmember monitoring (CM), and communication/ coordination techniques such as verbalize, verify, and monitor (VVM).

3.5.3. **Undesired State (US)** . A US is a safety- or mission-compromised aircraft state (position, altitude, condition, configuration, or mission crew events/performance) resulting from ineffective CRM/TEM. The appropriate response to a US is: Identify and Recover. Once the US has been identified, aircrews must take immediate corrective action—this action will likely include a combination of CRM, TEM, and technical skills. A US from which a crew does not immediately recover may lead to an incident, accident, mishap, or mission failure.

3.6. CRM/TEM Program Training Phases. Each phase of training should prepare individuals to apply the knowledge and skills acquired in their specialty and motivate participants for the next phase of training. Training phases will include up-to-date CRM/TEM Program best practices. **(T-2)** Curricula will tailor CRM/TEM Program knowledge and skill objectives to fit the unique characteristics of each primary mission. **(T-2)** Discussions will include the practical application of CRM/TEM Program skills and strategies for each crew position. **(T-2)**

3.6. (ACC) CRM/TEM Program Training Phases. ACC CRM/TEM training curriculum is designed to build upon CRM/TEM training learned at the Air Education and Training Command Undergraduate Pilot Training/Undergraduate Navigator Training (UPT/UNT) and Formal Training Unit (FTU) levels.

3.6.1. *Introductory or Awareness CRM/TEM Program Training.* Normally conducted in a formal training environment by Air Education and Training Command. Students learn standard CRM/TEM Program terminology and core concepts, along with TEM principles and introductory strategies (e.g., effective pilot flying (PF) and PM behaviors, flight member monitoring, CM behaviors, and VVM). Lesson plans will include a description of the building block approach to CRM/TEM Program training that the individual will participate in throughout their operational career. **(T-2)**

3.6.1. (ACC) The purpose of FTU training is to build a solid foundation of CRM/TEM principles and set the stage for CT and Web/ Local Area Network (LAN)-based training that will permeate day-to-day operations and flight briefings. The FTU CRM/TEM courses will form the bedrock upon which all subsequent MDS CRM/TEM training is based. This will advance the Air Force philosophy of career-spanning training in the critical area of Human Factors and CRM/TEM skills. All aircrews and crewmembers attending an ACC FTU will take the ACC FTU CRM/TEM course in their respective MDSs. This includes students transitioning to dissimilar aircraft. Aircrews cannot substitute CRM/TEM training received between dissimilar aircraft (e.g., single vs. multi-crew; heavy vs. fighter aircraft). Aircraft Transition CRM/TEM courses should leverage CRM/TEM knowledge gained in other aircraft and focus on the unique CRM/TEM requirements for the new aircraft. CRM/TEM training is to be included in all FTU training syllabi. The 4-hour FTU course can be set up in one of the following ways (as outlined in each MDS syllabi): one 4-hour block; two, 2-hour blocks; or 3 separate blocks of instruction at 2 hours, 1 hour, and 1 hour.

3.6.2. *Formal Training Unit/Combat Crew Training School CRM/TEM Program Training* . Students learn to apply knowledge and skills related to their assigned aircraft. Academic training is complemented during aircraft/simulator training. Emphasis should be placed on CRM/TEM Program techniques relating to preflight planning, briefing, in-flight utilization, and debriefing. This should include a succinct review of the CRM/TEM Program Model and CRM/TEM Program core concepts, as identified in paragraphs [3.3](#), [3.4](#), and [3.5](#) Mission-oriented simulator training (MOST) sessions or other simulated or actual operational scenarios may be used as an integral part of CRM/TEM Program training. Evaluate students for technical expertise, as well as CRM/TEM skills based on the core curricula concepts. **(T-2)** If aircrew training devices are not available, students should participate in group problem-solving exercises.

3.6.2.1. **(Added-ACC)** FTU CRM/TEM Training (Basic). This training is intended for all ACC aircrew members attending an ACC FTU or initial qualification training course. The FTU course is designed for recent graduates of UPT/UNT, RPA Pilot training, Basic Flight Engineer School, Undergraduate Air Battle Manager training, and Enlisted Aircrew Undergraduate Course and is a one-time only training requirement. The six core CRM curriculum skills and TEM will be introduced through the use of mission relevant scenarios and interactive group exercises. The training will be designed to convey the learning objectives as flight essential skills that contribute to and enhance mission effectiveness and flight safety. Aircrew members will be taught specific skills to be used during pre-flight planning, briefing, in-flight utilization, and debrief. Improved mission effectiveness remains the primary goal.

3.6.2.2. **(Added-ACC)** FTU CRM/TEM Training (Advanced). This course is designed for second tour crewmembers with previous experience in the assigned MDS or experienced fighter aircrew transitioning to another fighter aircraft. The courseware acknowledges the aircrew member's experience while refreshing his/her skills in all core CRM/TEM curriculum skills. Fighter transition CRM/TEM courses should take the current CRM/TEM fighter CT class with additional emphasis on the unique CRM/TEM aspects of the new aircraft. For non-fighter weapon systems, second tour aircrews should take CRM/TEM CT versus FTU CRM/TEM training.

3.6.2.3. **(Added-ACC)** Weapon System Trainer (WST) and Aircraft Sorties. CRM/TEM skills should be discussed as part of all training event pre-briefs and debriefs. Positive and negative CRM/TEM skill application observations will be used to generate post flight discussion. CRM/TEM skills will be debriefed, critiqued and documented on all training aircraft and simulator sorties.

3.6.2.4. **(Added-ACC)** Flight and Simulator Grade Sheets. Aircrew flight and simulator grade sheets will contain CRM/TEM grading items as specified in **Table 1** below. Instructors may use the CRM/TEM skill behaviors listed in AF Form 4031 or the examples in **Table 2** as a debriefing guide.

Table 1. (Added-ACC) Aircrew Grade Sheet Requirements.

ITEM	Grade Sheet	CRM/TEM Grading Items
1	Flight And Simulator	Mission Analysis, Situational Awareness, Communications, Risk Management/Decision Making, Task Management
2	Formation or tactical employment	Flight Coordination
3	Crew Aircraft	Crew Coordination

Table 2. (Added-ACC) Instructor Brief/Debrief Guide.

ITEM	CRM/TEM Skill	Positive Factors	Negative Factors
1	Mission Analysis	Organized; clearly assesses and defines mission, environment, aircraft, and situation; covers contingencies; checks understanding. Provides objective, thorough feedback; non-threatening, recaps key points, solicits inputs, provides corrective actions.	Neglects, rushed, incomplete, blames, vague, ignores.
2	Situational Awareness	Anticipates, monitors, prevents loss, recognizes own/other loss, regains.	Disorientated, confused, lost, fixated.
3	Communication	Clear, concise, listens, interprets, efficient, gets or gives constructive feedback.	Interrupts, withholds, discounts, ambiguous, mumbles.
4	Risk Management / Decision Making	Identifies and assesses problems, explores solutions, makes appropriate decisions, involves and informs flight members/crew.	Avoids delays, vacillates, argues, fails to consider consequences of decision.
5	Crew / Flight Coordination	Leads, identifies roles and expectations, sets tone, respects, encourages, assertive.	Judges, ridicules, overreacts, ignores, imposes, accepts error.
6	Task Management	Prioritizes, assigns tasks, creates time, plans, delegates, checklist discipline, system knowledge.	Rushed, overloaded, complacent, mis-prioritizes.
7	Threat and Error Management	Identifies threat, handles threat while effectively prioritizing other flight duties, uses crew/flight members effectively, addresses errors and discrepancies.	Misses threat, fixates on threat, mis-prioritizes, misses/accepts errors, ignores crew/flight members inputs.

3.6.3. *Mission-Specific Continuation CRM/TEM Program Training* . MAJCOMs, FOAs and DRUs are responsible for CRM/TEM Program continuation training. **(T-2)** This training reinforces aircrew CRM/TEM Program academic knowledge, skills, and strategies. In addition, it bolsters the preemptive identification and mitigation of operational threats and aircrew-made errors, thereby reducing the potential for mishaps.

3.6.3. **(ACC)** Mission Specific Continuation CRM/TEM Program Training. ACC aircrew members will receive MDS-specific CT at least once every 2 years. **(T-3)** These courses will build on FTU training and will emphasize skills needed for specific weapons systems and mission requirements. **(T-3)** The course contains an overview of the seven core CRM/TEM skills and associated observable behaviors that apply to the MDS. Data will be

collected to determine which of the observable behaviors within the seven core CRM/TEM curriculum skills most apply to the unit MDS and its mission. **(T-3)** Following the overview, at least two of the core skills and the application of TEM will be covered in depth, directly related to the MDS-specific case studies. **(T-3)** Skill practice opportunities will include MDS and mission-specific exercises, case studies, group interaction and skill assessment techniques. Realistic exercise and practice scenarios, designed to require specific actions by the student, will be based on the most current incidents and combat or operational case studies available for that MDS. **(T-3)** These exercises are used by the student to practice the effective use of CRM skills and by the instructors to validate and assess the crewmember's understanding of the skill.

3.6.3.1. Emphasize CRM/TEM Program skills and strategies in the mission qualification and continuation training programs so they become part of crewmembers' habit patterns and inseparable parts of operational practices. **(T-2)** Debriefings will include crewmembers' CRM/TEM Program performance (highlights/deficiencies) using AF 4031 (or approved substitute) as a guide. **(T-2)**

3.6.3.2. Frequency for recurring CRM/TEM Program continuation training is defined in the AFMAN 11-2 MDS specific volume 1, a RAP tasking memorandum, or a similar product. Lead commands are responsible for providing guidance to standardize CRM/TEM Program MDS-specific training policies and requirements. All aircrew require mission-specific continuation training. **(T-2)** Separating training by crew position should normally be avoided, however, it is not mandatory to conduct this training with a complete aircrew.

3.6.3.3. **(Added-ACC)** Additional CRM/TEM Training Opportunities. CRM/TEM practice opportunities will be provided through Web/LAN-based presentations developed for aircrew member use to avoid skill degradation. **(T-3)** Aircrew members can use these presentations during unit training days, safety days, or any type of squadron meeting where CRM/TEM would be a useful topic of discussion. **(T-3)** The Web/LAN training can be conducted individually or in a group setting. Presentations will include all materials required to present the topic of interest. A different CRM/TEM skill will be emphasized each quarter. **(T-3)** Quarterly training is not mandatory but is highly encouraged to augment the biennial CRM/TEM continuation training. Wing level Aerospace Physiologists (AP) are encouraged to utilize these presentations during wing/squadron/unit training sessions and during quarterly/annual safety meetings. Additional CRM/TEM training is located at www.cti-crm.com/caf. **(T-3)**

3.6.3.4. **(Added-ACC)** Unit Quarterly Training. Unit level presentations will be designed for flight or squadron-wide training. This training is intended for use during flight meetings, safety meetings, Instructor Pilot (IP)/flight lead/mission commander meetings, or any other appropriate unit activity. Downloaded from the Internet or local base LAN, each module contains approximately 5 minutes of academics and 10 minutes of CRM/TEM skills practice using group exercise and/or case study evaluation. Each downloadable file will contain all of the training materials required to conduct the training, including an instructor guide. It will be designed to be compatible with unit audio/visual training devices. Additional CRM/TEM training is located at www.cti-crm.com/caf. **(T-3)**

3.6.3.5. **(Added-ACC)** Individual Quarterly Training. To provide opportunity for training in all seven CRM/TEM skills and to provide flexibility to high operations tempo units, an individual 15-minute Web/LAN-based interactive computer aided instruction module will be provided. **(T-3)** These modules will be based on the unit quarterly training and are designed for individuals who could not attend the unit level course. **(T-3)** The module substitutes interactive courseware for group exercises to ensure maximum training and participation for the user. Additionally, web-based interactive animated case studies are available to reinforce CRM/TEM skills. These animations are based around of the seven skills and are MDS specific. Individual CRM/TEM training is located at www.cti-crm.com/caf.

3.6.3.6. **(Added-ACC)** Daily (CRM/TEM) Training Objectives. Daily (or as scheduled to fly) CRM/TEM practice will be provided through the use of a short training scenario titled Daily Training Objectives (DTOs). **(T-3)** The DTO will provide a short (2-3 minute) scenario which demonstrates the effective or ineffective use of a specific CRM/TEM behavior particular to a specific MDS. This will be followed by a "what if" or "what would you do" question. **(T-3)** Each DTO provides a specific CRM/TEM mission objective for that flight, to be discussed in the briefing or debriefing, and provides a daily standard against which combat crewmembers can compare mission performance. Aircrew members may use the DTO in conjunction with a flying/simulator mission or may review the topic on an individual basis. Use of DTOs is not mandatory but highly encouraged.

3.6.3.7. **(Added-ACC)** Aerospace Physiologists (APs) are encouraged to work with local units to further integrate CRM/TEM skills into daily operations. The following are examples of ways APs can help integrate CRM/TEM training into daily operations: attending flight briefings/debriefings; observation of mission planning; review and discussion of mission recording data; and presenting CRM/TEM training materials at aircrew meetings, aircrew human performance briefs, safety meetings and other squadron functions.

3.6.4. ***Flight Instructor/Evaluator Training*** . All flight and simulator instructors/evaluators (military and civilian) will complete instructor and evaluator specific CRM/TEM Program training **(T-2)** This training will normally be accomplished as part of an instructor or evaluator upgrade program. **(T-2)** Existing aircrew instructors and evaluators, who have not previously attended the Instructor CRM/TEM Program course, must complete this training. **(T-2)** Courseware builds on the previous blocks of training, both to reacquaint candidates with CRM/TEM Program fundamentals and to maintain continuity of terminology and strategies. MAJCOMs, FOAs, and DRUs develop courseware related to instructing and evaluating key CRM/TEM Program skills that apply to command and aircraft-specific missions. **(T-2)** Personnel may conduct this training at operational units, formal training units, or a combination, as required. Training includes, but is not limited to, the proper use of AF Form 4031 (or approved substitute). See AFMAN 11-2MDS, Volume 1, RAP tasking memo, or similar product for specific requirements. Annotate "CRM/TEM Program Instructor" within the crewmember's training record upon completion of this course. **(T-2)**

3.6.4. **(ACC)** Flight Instructor/Evaluator Training. Flight training instructors are key to a successful CRM/TEM training program. CRM/TEM instructor training courses are

designed to prepare the instructor to recognize, analyze, and evaluate CRM principles and document CRM/TEM performance in the FTU and operational unit. The continuous involvement of the instructor/evaluator at the unit level is critical to the success of such a course. Instructors and evaluators will be provided with the tools and courseware to allow them to integrate CRM/TEM principles into the unit's routine, from briefings to flight, from simulator training to safety meetings. **(T-3)**

3.6.4.1. Include CRM/TEM Program instructor or evaluator training in all instructor and evaluator upgrade programs. **(T-2)**

3.6.4.2. Flight instructors and evaluators should be highly proficient in all CRM/TEM Program skills and be experts in the recognition, observation, and reinforcement of these skills as they are applied by aircrew members in a mission environment.

3.6.4.3. Commanders will ensure contractor simulator instructor pilots have the CRM/TEM Program Instructor training requirement written into their performance work statement (PWS) to ensure the aforementioned instructors receive this training. **(T-2)**

3.6.4.4. **(Added-ACC)** Flight Instructor Training Objectives. CRM/TEM Instructor Training Course will provide proficiency in three specific areas:

3.6.4.4.1. **(Added-ACC)** Observing, assessing, and documenting CRM/TEM skills used by aircrew members in a mission environment. **(T-3)**

3.6.4.4.2. **(Added-ACC)** Providing specific, meaningful, and standardized feedback to aircrews regarding their CRM/TEM skills and overall mission effectiveness. **(T-3)**

3.6.4.4.3. **(Added-ACC)** Web/LAN-based training applications, including the DTOs.

3.6.4.5. **(Added-ACC)** Instructor Training Requirements. All instructors will complete CRM/TEM instructor training prior to assuming duties as an instructor. **(T-3)** Aircrew members may take Instructor CRM/TEM training just prior to formally entering instructor upgrade training. Instructor CRM/TEM training is a one-time requirement, exclusive of a particular weapons system and must be included in all instructor upgrade syllabi as a 2-hour block of instruction. **(T-3)** Instructors who have previously attended the Instructor CRM/TEM course should attend CT CRM/TEM training to meet their 2-year continuation training requirement. If contractor training is not available during the period of instructor upgrade, waivers can be requested IAW [paragraph 3.1.4](#) until the next available training date, but no later than one year after upgrade. Aircrews taking the instructor CRM/TEM course will receive credit for CT training requirements.

3.6.5. **CRM/TEM Program Facilitator Training** . The CRM/TEM Program Facilitator Training course is intended to teach foundational CRM/TEM Program skills and principles that make CRM/TEM Program effective and motivating to aircrew members.

3.6.5.1. CRM/TEM Program Facilitator Requirements. Formal CRM/TEM Program academic curricula must be delivered by a trained CRM/TEM Program Facilitator. **(T-**

2) Facilitator training will include training in running exercises, structured crew observation, and effective academic feedback. **(T-2)**

3.6.5.2. Obtaining CRM/TEM Program Facilitator Training. CRM/TEM Program Facilitator training is obtained via any Department of Defense (DoD) or non-DoD agency that provides certified or accredited CRM/TEM Program or CRM/TEM Program Facilitator training and/or is recognized by the MAJCOM CRM/TEM Program Manager. **(T-2)** Annotate “CRM/TEM Program Facilitator” within the crewmember’s training record upon completion of this training.

3.6.5.3. CRM/TEM Program Facilitator Responsibilities. Once trained, CRM/TEM Program Facilitators are expected to maintain knowledge of current CRM/TEM Program concepts. Though the formal CRM/TEM Program Facilitator training course provides foundational CRM/TEM Program concepts and principles, CRM/TEM Program Facilitators should continually update their CRM/TEM Program knowledge, in addition to updating their classroom academic skills.

3.6.5.4. **(Added-ACC)** Stop-Gap CRM/TEM Training. ACC primarily uses contracted service to provide all CRM training IAW AFMAN 11-290. However, unit APs may provide CRM/TEM stop-gap training (CRM/TEM CT courses only) in lieu of contracted services if the following guidelines have been met:

3.6.5.4.1. **(Added-ACC)** Contracted services are unavailable in a timely manner necessary to ensure compliance with this supplement.

3.6.5.4.2. **(Added-ACC)** APs must be certified from a recognized CRM Facilitator Course Program (e.g., Military or Civilian CRM contractor equivalent) to provide stop-gap training. **(T-3)** AP CRM facilitators must use the current contractor-provided continuation training courseware appropriate for the MDS instructing. **(T-3)** The AP must complete a courseware review with an ACC-certified CRM facilitator prior to teaching the CRM/TEM CT course. **(T-3)** APs will monitor CRM/TEM classes for all assigned MDSs during contractor provided training to better familiarize themselves with current facilitation techniques, case studies, and classroom interaction. **(T-3)** Once all requirements are achieved, each AP will be approved by Air Combat Command Human Weapon System Team (ACC/A3TH) and the ACC CRM Program Manager in ACC Training Support Squadron (ACC TRSS) in writing. **(T-3)** This appointment will be maintained in the AP’s instructor folder. **(T-3)**

3.6.5.4.3. **(Added-ACC)** Stop-gap training will be documented and reports will be submitted monthly to ACC TRSS/ACQ. **(T-3)** The reports will list the name, rank and unit of the aircrew member trained. The report will also list the date and place of the training and the AP that provided the training. **(T-3)**

4. Supporting Information. HQ Air Force Safety Center, MAJCOM, FOA, DRU and unit safety staffs will screen mishaps and human factors-related information for human performance errors. **(T-2)** MAJCOM, FOA, DRU and unit safety staffs should utilize HAF and lead command safety newsletters, or equivalent, related to CRM/TEM trend analysis. This information should be available for use during all phases of CRM/TEM training, as part of academics, simulator scenarios or for CRM/TEM case studies. When specifically requested, MAJCOM safety staffs will provide

sanitized, non-privileged mishap/hazard driven safety information relating to human performance to include safety metrics related to CRM/TEM.

4.1. **(Added-ACC) Air Combat Command Flight Safety Division (ACC/SEF).** ACC/SEF is the focal point for providing mishap information and Military Flight Operations Quality Assurance (MFOQA) data to CRM contractor personnel for case study and courseware development. ACC/SEF will work with ACC TRSS, the Air Force Safety Center (AFSEC), and CRM contractor personnel in determining case studies to be developed for CRM/TEM courses and case studies. **(T-3)** Upon request, ACC/SEF will provide sanitized aircraft mishap information to include USAF-produced mishap animations as well as controlled access to Air Force Safety Automated System (AFSAS) for CRM contractor personnel IAW DAFI 91-204, *Safety Investigations and Reports*. **(T-3)**

4.2. **(Added-ACC) Performance Work Statement.** The contract Performance Work Statement must identify all data the contractor must deliver to the government, to include background data. Contractors will manage all data created for government use or legally controlled by the government in accordance with AFI 33-322, *Records Management and Information Governance Program*. This includes electronic records along with any technical documentation that allows the government to use the data.

4.3. **(Added-ACC) Statement of Work.** Contract statement of work or performance work statements must include the following statement: "Contractors will manage all data created or used for the government in accordance with the in accordance with (IAW) AFI 33-322. This includes all electronic records and technical documentation that will allow the government to use the data. Upon completion or termination of the contract, all material will be turned over to the government." **(T-3)**

Section B—CRM/TEM Program Administration

5. **Air Force Oversight.** AF/A3T provides oversight of the AF CRM/TEM Program. The AF CRM/TEM Program Steering Committee and AF CRM/TEM Program Working Group provide a means of gathering and analyzing program effectiveness and changes.

5. **(ACC) ACC Oversight.** Operational control of ACC's CRM/TEM program will rest in (ACC TRSS). Command policy and guidance related to CRM/TEM content and delivery will rest within Air Combat Command Director of Operations (ACC/A3) staff operational directorates (Air Combat Command, Command and Control, Intelligence, Surveillance, and Reconnaissance Division (ACC/A3C), Air Combat Command Persistent and Reconnaissance Division (ACC/A3M), and Air Combat Command Flight Operations Division (ACC/A3T)).

5.1. **The AF CRM/TEM Program Steering Committee.** The Steering Committee provides resources for administrative support to the AF CRM/TEM Program Working Group and standardizes CRM/TEM Program requirements, terminology, and change management.

5.1.1. Membership.

5.1.1.1. ACTF, Chair.

5.1.1.2. Deputy Chief of Staff, Operations, Directorate of Training and Readiness, Combat Air Forces Division (AF/A3TC).

- 5.1.1.3. Deputy Chief of Staff, Operations, Directorate of Training and Readiness, Mobility Air Forces Division (AF/A3TM).
- 5.1.1.4. HQ Air Force Flight Standards Agency/Operations Directorate (AFFSA/XO).
- 5.1.2. **Schedule.** The Steering Committee meets prior to each Aircrew Management Executive Council (AMEC) meeting and, as needed, to review inputs and set working group agenda items.
- 5.1.3. **Contact information.** ACTF workflow email: usaf.pentagon.af-a3.mbx.actf-workflow@mail.mil.

5.2. The AF CRM/TEM Program Working Group.

- 5.2.1. **Membership.** Members of the AF CRM/TEM Program Steering Committee, AFSEC representative, MAJCOM/FOA/DRU A3 (or equivalent) representatives, and additional personnel, as designated by the aforementioned steering committee.
- 5.2.2. **Scope and Administration.** The Working Group reviews program execution, policy changes, industry standards, and receives feedback from command programs.
 - 5.2.2.1. The Working Group will meet in conjunction with AMEC meetings or as designated by the AF CRM/TEM Program Steering Committee. Agenda items may be submitted to the Steering Committee for consideration.
 - 5.2.2.2. Report recommendations and findings to the Director of Training and Readiness (AF/A3T) and then disseminate to MAJCOM, FOA and DRU operations directorates.

5.3. **Command Execution and Oversight.** Execution and oversight of command CRM/TEM Programs rests within the MAJCOM, FOA and DRU operations directorates. MAJCOM, FOA and DRU Safety and Surgeon General Directorates are advisors and provide respective subject matter experts to the operations directorates for inputs to course content and delivery.

5.3.1. **CRM/TEM Program Manager.** Each MAJCOM, FOA and DRU will appoint a CRM/TEM Program Manager within the operations (or equivalent) function that will be responsible for the command program. **(T-1)** The CRM/TEM Program Manager will:

5.3.1. **(ACC) CRM/TEM Program Manager.** ACC program manager resides in ACC TRSS/ACQ, DSN 574-4280/8600, commercial 757-764-4280/8600.

- 5.3.1.1. Ensure lead command's 11-2 MDS specific volumes 1 and 2 publications (or RAP tasking memo/similar product) provide CRM/TEM Program policy guidance. **(T-2)**
- 5.3.1.2. Implement lead command CRM/TEM Program policy guidance. **(T-2)**
- 5.3.1.3. Ensure each applicable CRM/TEM Program training phase ([paragraph 3.6](#)) is implemented and evaluated. **(T-2)**
- 5.3.1.4. Forward AF Form 4031 (or approved substitute) trend data to CRM/TEM Program instructors/facilitators. **(T-2)**
- 5.3.1.5. Ensure a system is in place to collect topic-relevant aircrew performance information (e.g., Standardization and Evaluation trends, sanitized mishap data,

hazardous air traffic reports (HATR), military flight operations quality assurance (MFOQA) analysis, Line Oriented Safety Audit (LOSA) findings, Airman Safety Action Program (ASAP) reports, and inspector general reports), and send to CRM/TEM Program Facilitators and Instructors. **(T-2)**

5.3.1.6. Evaluate contractor implementation of CRM/TEM Program objectives. **(T-2)** Where discrepancies are identified, initiate corrective actions. **(T-2)**

5.3.1.7. Ensure quality assurance representatives (QARs) and Inspectors General have current evaluation guidance to evaluate CRM/TEM Program objectives. **(T-2)** Where discrepancies are identified, initiate corrective actions. **(T-2)**

5.3.1.8. Provide feedback to the AF CRM/TEM Program Working Group regarding program status covering: training continuum, standardization, and research and development needs. **(T-2)**

5.3.1.9. Interact with MAJCOM, FOA or DRU CRM/TEM Program advisors (Safety, Aerospace Physiology, etc.), ensuring CRM/TEM Program training is effective and minimizes redundancies with other programs as provided by Safety, Aerospace Physiology, etc. **(T-2)**

5.3.1.10. Provide training to develop and improve CRM/TEM Program knowledge and skills, based on paragraphs 3.3, 3.4, 3.6, information procured via the AF Form 4031 (or approved substitute), and sources deemed pertinent by the MAJCOM CRM/TEM Program Manager. **(T-2)** Sources may include: AFSEC and MAJCOM safety reports, military and civilian aviation mishaps, ASAP reports, MFOQA analysis, MAJCOM standardization/evaluation information, Federal Aviation Administration (FAA) Advisory Circulars, FAA Safety Alerts, LOSA recommendations, and findings from the aviation industry.

5.3.1.10. **(ACC)** Specific responsibilities within ACC are:

5.3.1.10.1. **(Added-ACC)** ACC TRSS/ACQ (Acquisitions Flight). ACC TRSS/ACQ is responsible for managing CRM training contract to include courseware approval and implementation. ACC TRSS/ACQ is responsible for overseeing contractor development of CRM/TEM program courseware and CT programs to meet the requirements of AFI/AFMAN 11-2MDS-Specific V1s and V2s, and associated lead MAJCOM supplements. ACC CRM/TEM program manager is also the CRM contract Contracting Officer's Representative (COR).

5.3.1.10.2. **(Added-ACC)** ACC/A3 Functional Managers. ACC/A3 functional managers and TRSS Detachments are responsible for assisting in CRM/TEM courseware review as required. ACC/A3C, Air Combat Command Personnel Recovery and Joint Integration Division (ACC/A3J), ACC/A3M, ACC/A3T and ACC/A3TH may be required to provide points of contact responsible for interfacing with the ACC program manager on matters related to command policy and guidance.

5.3.1.10.3. **(Added-ACC)** Operations Groups. OG/CCs will appoint an office within the group responsible for their units' CRM program. This office must have experienced aircrew member(s) in a primary weapon system of their wing/unit. **(T-**

3)

5.3.1.10.3.1. **(Added-ACC)** The assigned office is responsible for reporting any concerns to their CRM/TEM training to the chief COR/program manager assigned to ACC TRSS/ACQ, Langley Air Force Base, Virginia.

5.3.1.10.3.2. **(Added-ACC)** The assigned office will ensure the contractor conducts training and will report all discrepancies to the COR immediately. **(T-3)**

5.3.1.10.3.3. **(Added-ACC)** The assigned office will provide oversight to the unit's CRM/TEM program to include updating the OG/CC on CRM feedback and command policy and guidance. **(T-3)**

5.3.1.10.4. **(Added-ACC)** Standardization Evaluation. CRM skill evaluation criteria will be included in AFI 11-2 MDS-Specific V2s. **(T-3)**

5.3.1.10.5. **(Added-ACC)** CRM Class Size. CRM/TEM CT class sizes should have at least 4 aircrew members but no more than 20. CRM/TEM CT classes that do not have the minimum required number of participants may be cancelled. Unit schedulers must notify the contractor of any scheduling changes at least 48 hours in advance. CRM/TEM formal training unit (FTU) and instructor class sizes should normally be at least 4 aircrew members but no more than 20.

5.3.1.10.6. **(Added-ACC)** Flying Squadrons. Flying squadron commanders will appoint a CRM/TEM representative to oversee the squadron CRM/TEM program and advise the commander as required. The representative will monitor and encourage participation in Unit Quarterly Training, Individual Quarterly Training and Daily CRM Training Objectives (referenced in [paragraph 3.6.3.4](#) through [paragraph 3.6.3.6](#) of this publication). The representative will periodically examine mission Grade Sheets to determine positive/negative trends in unit application of CRM skills. Each squadron CRM representative will also coordinate with the OG/CC CRM representative in all aspects of the unit CRM program. **(T-3)**

5.3.1.11. Ensure continuation training incorporates real-world operational experiences, sanitized mishap data, research findings, critiques, and flight evaluation trends. **(T-2)** Courseware will contain up-to-date case studies covering human factors elements and will be presented in an interactive format so as to exercise students' decision making and reasoning skills and, where appropriate, stimulate discussion. **(T-2)** The CRM/TEM Program knowledge and skill objectives taught will be tailored to the unique characteristics of the MAJCOM's, FOA's, DRU's primary missions. **(T-2)**

5.3.1.12. Identify the process for gathering, analyzing, and incorporating CRM/TEM Program trend data from MAJCOMs into existing training and evaluation programs. **(T-2)**

5.3.1.13. Ensure continuity of course content with Air Education and Training Command's Introductory or Awareness CRM/TEM Program Training. **(T-2)** See [paragraph 3.6.1](#).

5.3.1.14. Ensure that data collected and/or generated through CRM/TEM Program and trend gathering processes are not used for monitoring aircrew performance to initiate punitive or adverse action. **(T-2)**

5.3.1.15. The above requirements are not all inclusive and MAJCOMs may augment their CRM/TEM Program training with aviation industry standard practices or methodologies. Training for CRM/TEM Program or other programs should comply with MAJCOM-specific supplements, if any, to this publication. MAJCOMs will continue to adhere to the training requirements outlined in this publication. **(T-2)**

5.3.2. Command Steering Committees. MAJCOMs, FOAs and DRUs may establish command steering committees to identify the most effective methods for delivering and administering CRM/TEM Programs.

5.3.2. (ACC) ACC Command Steering Committee, chaired by ACC CRM Program Manager (ACC TRSS/ACQ), will meet as required.

5.3.2.1. (Added-ACC) Mandatory members are representatives from ACC/A3T (A3TV, Air Combat Command Flight Operations and Training Branch (ACC/A3TO), ACC/A3TH, ACC/A3C, ACC/A3J, ACC/A3M, ACC/SEF and ACC TRSS (to include ACC TRSS Human Factors/Flight Physiologist representative)).

5.3.2.2. (Added-ACC) Specific responsibilities of the ACC CRM Steering Committee include:

5.3.2.2.1. **(Added-ACC)** Review CRM program training and critiques (OPR: ACC TRSS/ACQ).

5.3.2.2.2. **(Added-ACC)** Review syllabi for CRM compliance (OPR: ACC TRSS/ACQ).

5.3.2.2.3. **(Added-ACC)** Review mishap report information of significance for CRM case study development (OPR: All).

5.3.2.2.4. **(Added-ACC)** Review Stan Eval CRM trends (OPR: ACC/A3TV).

5.3.2.2.5. **(Added-ACC)** Recommend improvements for CRM program (OPR: All).

JOSEPH T. GUASTELLA, Jr., Lt Gen, USAF
Deputy Chief of Staff, Operations

(ACC)

MARK H. SLOCUM, Maj Gen, USAF
Director of Air and Space Operations

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

AFPD 11-2, *Aircrew Operations*, 31 January 2019

AFPD 11-4, *Aviation Service*, 12 April 2019

AFI 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure*, 21 September 2018

AFI 33-322, *Records Management and Information Governance Program*, 23 March 2020

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

(Added-ACC) DAFI 91-204, *Safety Investigations and Reports*, 10 March 2021

(Added-ACC) DAFMAN 90-161, *Publishing Process and Procedures*, 15 April 2022

Prescribed Forms

(Added-ACC) None

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

Adopted Forms

(Added-ACC) AF Form 8, *Certificate of Aircraft Qualification*

AF Form 847, Recommendation for Change of Publication

AF Form 3862, *Flight Evaluation Worksheet*

Abbreviations and Acronyms

A3—Operations

(Added-ACC) **ACC**—Air Combat Command

AF—Air Force

AFI—Air Force Instruction

(Added-ACC) **AFMAN**—Air Force Manual

AFR—Air Force Reserve

(Added-ACC) **AFRC**—Air Force Reserve Command

(Added-ACC) **AFSAS**—Air Force Safety Automated System

AFSEC—Air Force Safety Center

AMEC—Aircrew Management Executive Council

ANG—Air National Guard

(Added-ACC) **AP**—Aerospace Physiologist

(Added-ACC) ARMS—Aviation Resource Management System

ASAP—Airman Safety Action Program

CM—Crewmember Monitoring

(Added-ACC) COR—Contracting Officer’s Representative

CRM—Cockpit/Crew Resource Management

(Added-ACC) CT—Continuation Training

DAFI—Department of the Air Force Instruction

DAFPD—Department of the Air Force Policy Directive

DOD—Department of Defense

DRU—Direct Reporting Unit

(Added-ACC) DTO—Daily Training Objective

FAA—Federal Aviation Administration

FPM—Flight Path Management

FOA—Field Operating Agency

(Added-ACC) FTU—Formal Training Unit

HATR—Hazardous Air Traffic Report

(Added-ACC) IAW—In Accordance With

(Added-ACC) IP—Instructor Pilot

(Added-ACC) LAN—Local Area Network

LOSA—Line Oriented Safety Audit

MAJCOM—Major Command

MDS—Mission Design Series

MFOQA—Military Flight Operations Quality Assurance

MOST—Mission-Oriented Simulator Training

(Added-ACC) OG—Operations Group

(Added-ACC) OG/CC—Operations Group Commander

(Added-ACC) OPR—Office of Primary Responsibility

PF—Pilot Flying

PM—Pilot Monitoring

PWS—Performance Work Statement

QAR—Quality Assurance Representative

RAP—Ready Aircrew Program

RM—Risk Management

(Added-ACC) RPA—Remotely Piloted Aircraft

SA—Situational Awareness

SOP—Standard Operating Procedure

(Added-ACC) STAN/EVAL—Standardization and Evaluation

TEM—Threat & Error Management

(Added-ACC) UPT/UNT—Undergraduate Pilot Training/Undergraduate Navigator Training

US—Undesired State

(Added-ACC) USAF—United States Air Force

(Added-ACC) USC—United States Code

VVM—Verbalize, Verify, Monitor

(Added-ACC) WST—Weapon System Trainer

Office Symbols

(Added-ACC) ACC/A3—Air Combat Command Director of Operations

(Added-ACC) ACC/A3C—Air Combat Command, Command and Control, Intelligence, Surveillance, and Reconnaissance Division

(Added-ACC) ACC/A3J—Air Combat Command Personnel Recovery and Joint Integration Division

(Added-ACC) ACC/A3M—Air Combat Command Persistent Attack and Reconnaissance Division

(Added-ACC) ACC/A3T—Air Combat Command Flight Operation Division

(Added-ACC) ACC/A3TH—Air Combat Command Weapon System Team

(Added-ACC) ACC/A3TV—Air Combat Command Standardization and Evaluation Branch

(Added-ACC) ACC/SEF—Air Combat Command Flight Safety Division

(Added-ACC) ACC TRSS/ACQ—Air Combat Command Training Support Squadron Acquisition Flight

Terms

A3—Standard A-Staff two-digit office symbol for Operations.

Cockpit/Crew Resource Management (CRM)—The effective use of all available resources (people, weapon systems, facilities, equipment, and environment) by individuals or crews to safely and efficiently accomplish an assigned mission or task.

Communication—The act of sharing information with others to cause action: to direct, to inform, to question, or to persuade.

Coordination—As used in this publication, the act of working with all the members of the crew/flight to accomplish the tasks of the mission.

Crew—As used in this publication, any collection of Air Force personnel who routinely work together to accomplish an Air Force mission. For example, an air task order-designated team of fighter pilots and airborne battle managers prosecuting an interdiction mission uses "crew" skills to maximize effectiveness.

Crewmember Monitoring (CM)—A crewmember who is not in direct maneuvering control of the aircraft, yet jointly responsible for actively monitoring the aircraft's current/projected flight path and energy state, intervening if necessary.

Decision Making—The ability to choose a course of action using logical and sound judgment based on available information.

Errors—Actions or inactions that lead to deviations from organizational or flight crew intentions or expectations, reduce safety margins, and increase the probability of adverse operational events on the ground or in flight. Unmanaged and/or mismanaged errors can lead to an undesired aircraft state. Errors in the operational context tend to reduce the margins of safety and increase the probability of adverse events.

Flight Discipline—The judgment and actions exercised by AF personnel to adhere to the spirit, intent, and written word of governing guidelines in the presence of temptation to do otherwise, while executing the Air Force flying mission. It also includes the prioritization of tasks based on crew responsibilities to ensure safe mission accomplishment while demonstrating the highest degree of integrity in the performance of flight duties.

Flight Path Management (FPM)—The planning, execution, and monitoring of the aircraft's guidance, trajectory, and energy state. FPM applies anytime the aircraft is in motion—in flight or on the ground. All cockpit crewmembers must ensure that effective FPM is a primary and shared responsibility during all phases of flight.

Mission Debrief—Reviewing and discussing mission accomplishment, looking at what was achieved, what barriers were encountered, and how the mission could be accomplished better next time.

Mission-Oriented Simulator Training (MOST)—Training presented as a part of a CRM/TEM Program in a realistic, operationally-based simulator environment in real time.

Mission Planning—Taking all of the information for a mission and developing short term, long term, and contingency plans to coordinate, allocate, and monitor crew/flight and aircraft resources. Effective planning leads to flight conduct that removes uncertainty, increases mission effectiveness, and enhances safety.

Performance Work Statement (PWS)—In layman's terms, a document incorporating standards that inform the contractor of specific contractual requirements and relevant desired outcomes.

Pilot Flying (PF)—The pilot at the flight controls who is in direct maneuvering control of the aircraft. The PF is primarily responsible to control and monitor the aircraft's current/projected flight path and energy state (including autoflight systems, if engaged).

Pilot Monitoring (PM)—The pilot at the flight controls who is not in direct maneuvering control of the aircraft, yet is primarily responsible for actively monitoring the aircraft's current/projected flight path and energy state, intervening if necessary.

Risk Management—The systematic process of identifying hazards, assessing risk, making control decisions, implementing control decisions, and supervising/reviewing the activity for effectiveness for both on- and off-duty missions/activities.

Situational Awareness (SA)—In flying and aircraft operations, refers to an aircrew member's continuous *accurate* perception of self and aircraft in relation to the dynamic environment of flight, threats, and mission, as well as the ability to forecast, then execute, tasks based upon that perception.

Skills Criteria—Defined skills used as the basis for operational training and evaluation. The characteristics of the skills are that they are easily identifiable and offer consistency in grading evaluation.

Task Management—The ability to alter a course of action based on new information, maintain constructive behavior under pressure, and adapt to internal and external environment changes.

Threat—An event or error that occurs outside the influence of the aircrew (i.e., it was not caused by the crew), that increases operational complexity and must be managed to maintain safety margins, and requires crew attention. All threats have the potential to negatively affect flight operations.

Threat and Error Management (TEM)—An aviation industry-recognized best practice, TEM is a structured, proactive, systems approach that builds on multiple layers of defenses; and, applies to all single and multi-seat aircraft operators, flight, and crewmembers. TEM is intuitively, logically, and flexibly designed to identify, avoid, trap (allay) and mitigate threats and/or inevitable human errors to avoid US, mission failure, and potential mishaps.

Undesired State (US)—Operational conditions where an unintended situation results in a reduction in margins of safety. US' are a result of ineffective CRM/TEM and may lead to an incident, accident, mishap, or mission failure.

Verbalize, Verify, and Monitor (VVM)—An aviation industry-proven monitoring and cross-checking TEM technique. Using VVM, aircrew members: (1) Verbalize their intentions prior to acting on them, (2) Verify that the intended actions have been made, and (3) Monitor those actions to ensure the intended outcome(s) have occurred, thereby mitigating threats and trapping errors.