DEPARTMENT OF THE NAVY
COMMANDER NAVAL AIR FORCES
BOX 357051
SAN DIEGO, CALIFORNIA 92135-7051

COMNAVAIRFORINST 1542.7B
N45
2 MAY 2016

COMNAVAIRFOR INSTRUCTION 1542.7B

From: Commander, Naval Air Forces

Subj: NAVY AND MARINE CORPS CREW RESOURCE MANAGEMENT PROGRAM

Ref: (a) OPNAVINST 3710.7 (series)
(b) MCO P3500.14 (NOTAL)
(c) OPNAVINST 1542.7D

Encl: (1) Definitions
(2) Naval Air Systems Command Field Activity CRM Guidelines
(3) CRM Training and Evaluation Record
(4) Table of CRM Curriculum Model Managers and Instructor Requirements
(5) Threat and Error Management Model

1. Purpose. To establish policies, responsibilities and procedures for administration of the Navy and Marine Corps Crew Resource Management (CRM) program, per references (a) through (c). This instruction is new and should be reviewed in its entirety, to include all enclosures.

2. Cancellation. COMNAVAIRFORINST 1542.7A.

3. Background. In 1991, the Navy began a research and development effort into aviation mishaps and identified seven behavioral skills common to the mishaps. An Aircrew Coordination Training (ACT) program was developed in 1993 in an effort to reduce the number of potential mishaps by addressing these seven skills and to improve training standardization. The integrated ACT program was implemented in 1995. Annual ground training and flight evaluation requirements were included in 2001 to accurately evaluate and educate aircrew within CRM.

4. Objective. Integrate CRM into all facets of flight operations, manned and unmanned, to achieve optimal mission effectiveness by applying specifically-defined behavioral skills into all Navy and Marine Corps aviation processes. Practicing CRM principles will improve mission effectiveness, minimize crew-preventable errors, improve recovery from crew and external errors, as well as serve to reduce the number of mishaps resulting from poor CRM and Time Critical Operation Risk

Management (TCRM) decisions. Implement Threat and Error Management (TEM) to compliment CRM by providing a structure to apply the seven critical skills and prevent potentially fatal mishaps due to loss of situational awareness. TEM concepts are discussed in enclosure (5).

5. Scope. The provisions of this instruction are applicable to all naval aviation activities operating manned and/or unmanned aircraft.

6. Definitions. Enclosure (1) provides a list of terms used in this instruction.

7. Policy

a. Goal. The goal of CRM is to improve mission effectiveness by minimizing crew-preventable errors, maximizing crew coordination and optimizing risk management. CRM shall be an integral part of every flight operation and it is the responsibility of all aircrew to evaluate ways in which lessons learned during CRM training can be incorporated into their flight operations to include: academics, simulators, flight training and operational missions. Minimum standards for each aircraft type/model/series (T/M/S)-specific integrated CRM program are outlined in enclosure (4).

b. CRM Qualification and Life Cycle Training Model. All Navy and Marine Corps aircrew shall receive CRM training throughout their aviation careers. The CRM training continuum requires that:

(1) Introductory CRM ground training shall be provided during Aviation Preflight Indoctrination (API) with initial CRM flight training being provided during primary flight training. Commands that conduct only simulator based training (SBT) shall also provide initial CRM training.

(2) Initial T/M/S or SBT-specific CRM ground training shall be conducted in all CNATRA and fleet replacement squadrons (FRS) prior to the first flight and is required for all students, and instructors under training and any NATOPS qualified aircrew without documented initial T/M/S-specific ground training as defined by reference (a). In circumstances

where formal FRS, or equivalent, training is not available, initial CRM ground and/or flight training may be completed at a fleet squadron. These training requirements apply to all Navy and Marine Corps aircraft flown in training, testing/evaluation, or operational environments and shall be completed by aircrew returning from duties not involving flying or whose T/M/S NATOPS qualifications have expired.

(3) Annual T/M/S or SBT-specific recurrent CRM ground training and flight evaluation is required while in a flying billet. The flight evaluation may be conducted concurrently with any operational or training flight or simulator, including NATOPS and instrument evaluations.

c. Initial T/M/S-Specific Training. Initial CRM ground training and flight evaluation shall be completed by a designated CRM Instructor (CRMI) or CRM Facilitator (CRMF) and shall include:

(1) Discussion of T/M/S-specific aircraft historical data and causal factors of mishaps and hazard reports (HAZREPs) that correspond to aircrew missions and experience levels. Any community topics or areas of concern identifying recent trends of recurring CRM problems for aircraft and aircrew should be included.

(2) CRM training and controls that focus on the application of the seven critical skills.

(3) Discussion of T/M/S CRM barriers and challenges that impact mission effectiveness.

(4) Discussion of CRM integration with aircraft automation.

(5) A T/M/S-specific case study or scenario.

d. Annual T/M/S or SBT-Specific Recurrent Training. Annual CRM ground training and flight evaluations shall be completed by a designated CRMI or CRMF.

(1) Ground training shall be completed once per year and may be accomplished at any time during the year before the

flight evaluation. This latitude is afforded in order to facilitate scheduling and to allow for the best possible training with a large portion of aircrew. The ground training is valid for 12 months from the last day of the month in which the training was conducted. A CRMI/F conducting the training meets their individual annual requirements. Ground training shall include:

(a) Discussion of CRM principles and critical skills as they relate to the current and expected missions/operations of the squadron or unit.

(b) Any topics or community areas of concern that show recent trends of recurring problems for aircraft and aircrew. In particular, highlight, review and discuss any recent/relevant community mishaps or HAZREPs that include CRM causal factors and/or have significant CRM implications.

(c) An in-depth case study that highlights CRM trends and control measures for the specific T/M/S.

(d) An open and frank discussion on the current state of CRM within the community, to include: best practices, areas for improvement, suggested changes to this instruction, and any other CRM ideas/topics to improve the program. Results shall be forwarded to the community CRM Program Manager for review and then to the CRM Instructional Model Manager (IMM).

(2) Renewal of CRM flight evaluation may be accomplished within 60 days preceding the expiration of the current qualification and is valid for 12 months from the last day of the month in which the current qualification expires. Otherwise, currency shall be valid for 12 months from the last day of the month in which the evaluation was flown. Aircrew shall complete CRM ground training prior to the flight evaluation. When possible, the CRM flight evaluation should be conducted in a full-motion, high-fidelity simulator in order to provide realistic flight scenarios coupled with environmental control, allowing aircrew to be thoroughly evaluated in a safe, yet realistic, environment. Simulation also allows high-quality feedback and debriefing via flight recording technology. A qualified CRMI or CRMF shall conduct the flight evaluation and provide feedback on the utilization of individual CRM skills.

e. Multiple Aircraft and SBT Qualifications and Designations. CRM qualifications and designations are typically valid for a single aircraft T/M/S. However, individual community CRM Program Managers may require only T/M or SBT-level CRM qualification at their discretion.

(1) Qualification. Personnel who perform aircrew duties in more than one aircraft T/M/S or SBT shall receive initial CRM training in each aircraft T/M/S. Full recurrent training shall be completed in at least one aircraft T/M/S or SBT and modified recurrent training, consisting of a series-specific case study or scenario, shall be completed for any additional aircraft series.

(2) Designations. Commanding Officers of units with more than one aircraft T/M/S or SBT assigned may designate, with approval from each applicable T/M/S or SBT Curriculum Model Manager, a CRMI or CRMF to conduct ground training and flight evaluations in different aircraft series under their purview. Included aircraft series should share similar mission sets (HH-60H and MH-60S not F/A-18E/F and E/A-18G). Specific guidelines for Naval Air Systems Command (NAVAIRSYSCOM) field activities are provided in enclosure (2).

f. CRM Instructor Training. Basic CRMI training shall be provided by the CRM Instructional Model Manager (IMM) to meet course requirements set forth by the IMM. Successful completion of the CRMI course is a prerequisite for designation as a CRM Community Program Manager (PM) or CRMI. Prospective T/M/S or SBT CRMIs shall be designated CRMFs and should have at least 12-18 months remaining in their current squadron prior to designation.

g. CRM Facilitator Training. CRMF training shall be approved by the T/M/S CRM Community Model Manager (CMM), but may be delegated other T/M/S-qualified CRMIs. Basic course requirements shall be T/M/S or SBT-specific and follow:

(1) CRMF training shall encompass CRM history, CRM seven critical skills, COMNAVAIRFORINST 1542.7 (series), program administration, facilitation and evaluation techniques, workload management, teamwork and include a review of the community-

specific annual ground training brief. The prospective CRMF will conduct and grade a CRM flight evaluation while under instruction. The CMM shall develop standardized training to qualify CRMFs based upon the IMM curriculum and identify any additional required topics.

(2) CRMF training intended for eventual CRMI qualification (recent graduate of the CRMI course) shall include community-specific facilitation and evaluation techniques in addition to standard CRMF requirements.

(3) CRMF training shall be logged in the Naval Air Training and Operating Procedures Standardization (NATOPS) Flight Personnel Training/Qualification Jacket in Section III, part A (Schools and Courses). Designations shall be logged in the appropriate section of enclosure (3).

(4) CRMF qualification training shall only be conducted by a CRMI and must be completed whenever an individual changes T/M/S or upon NATOPS qualification expiration.

h. Flight Instructor Training. FRS and TRACOM units shall incorporate formal CRM training into instructor indoctrination in order to focus on instructing CRM principles in flight at the student learning level. Training should prepare instructors for unique CRM challenges present in the training environment including cockpit/cabin dynamics, communication barriers, and specific T/M/S characteristics that lead to CRM breakdown among student/instructor crews. This requirement can be combined with initial ground training.

i. Civilian Aircrew/Instructors. All GS and contract civilians that function as active aircrew shall maintain the same CRM qualifications as a military aircrew. Non-flying civilians that provide flight instruction are required to maintain CRM ground training currencies and shall be a designated CRMF or CRMI if providing CRM initial or recurrent ground training.

j. Unmanned Aircraft Systems (UAS). All UAS platforms shall conduct CRM training per this instruction, to include training for UAS Crewmembers (UASC), Air Vehicle Operators (AVO), Mission Payload Operators (MPO), and Ground Maintenance Vehicle Operators (GMVO).

k. Extension to Expiration Date. Commanding Officers may grant a written extension to the CRM expiration date for aircrew who would otherwise expire during deployment. The extension shall not exceed 90 days after return from deployment.

l. Failure to Meet CRM Requirements. Personnel who fail to meet CRM training requirements (initial, annual or SBT specific) shall not serve as aircrew. Once CRM requirements are met, aircrew duties may be resumed.

m. Documentation Requirements. The CRM Training/Evaluation Record, enclosure (3), shall be used to document CRM courses, designations, ground training, flight evaluations, and extensions in individual NATOPS Flight Personnel Training/Qualification Jackets in Section II, Part C. CRM flight evaluations shall be documented on an applicable T/M/S-approved form and include: "Conducted CRM flight evaluation per COMNAVAIRFORINST 1542.7B" along with any specific comments regarding CRM performance.

8. Responsibilities. Specific guidance and standard operating procedures should be developed at each level to ensure proper implementation of this program.

a. Commander, Naval Air Forces. Delegated responsibility for overall management of the CRM program.

b. Commander, Naval Air Forces NATOPS Officer (N455). Serve as CRM Program Administrator for the overall management of the CRM program and policy.

c. Deputy Commandant for Aviation (DC AVN). Serve as the USMC representative for the CRM program.

d. Naval School Of Aviation Safety CRM Program Officer.

(1) Serve as Program and Instructional Model Manager (IMM).

(2) Establish a CRMI training program, incorporating the latest academic and commercial CRM research and developments.

(3) As requested, dispatch a Mobile Training Team (MTT) to Fleet concentration areas to provide CRMI training to Fleet units. Fleet units are responsible for any funding requirements.

(4) Perform annual CRM Program Manager assessments for all CMMs, not to exceed an 18-month cycle, with results forwarded to the unit's ISIC and COMNAVAIRFOR N455. Ensure that T/M/S CMMs are in compliance with this instruction and assist in the development of CRM initiatives. Develop, maintain, and disseminate a standardized PM assessment checklist.

(5) Collect, maintain, and disseminate CRM program instructional materials and relay pertinent CRM-related issues to all CMMs as a resource for updating CRM programs.

(6) Provide CRM training to aviation students (ASM, ASO, ASC) at Naval School of Aviation Safety.

e. Naval Safety Center CRM Program Officer.

(1) Maintain a database of Safety Investigation Reports (SIRs) and HAZREPs related to CRM.

(2) Disseminate aviation mishap investigation and hazard report data where CRM was cited as a causal factor in a mishap or was a critical factor in averting a mishap.

(3) Coordinate with the CRM IMM and Commander Naval Air Forces Pacific/Atlantic Safety (N45) in order to further develop Naval Aviation CRM.

f. CRM T/M/S or SBT CMM. Refer to enclosure (4).

(1) Designate in writing a CRM T/M/S Community PM. In order to maintain standardization, CMM should designate an assistant PM, who is a qualified T/M/S or SBT CRMI, at each geographic location under their cognizance (as applicable). The CMM may delegate any of the following duties to the PM.

(2) Administer a standardized CRM training program for all units operating a common aircraft T/M/S and ensure flow of

pertinent CRM, and TCRM issues to all units under their cognizance (e.g., lessons learned, CRM breakdown, best practices, and specific areas of concern for the T/M/S).

(3) Provide standardized unit-level CRMI/F training to Fleet squadrons and other units under their cognizance. Establish minimum aviation experience requirements for Instructors, Unit Level Managers, and Facilitators within their T/M/S. Establish CRMI/F currency requirements for ground training and flight evaluations conducted per year.

(4) Designate an adequate number of CRMIs to provide qualification of CRMFs to perform T/M/S CMM functions. Submit annual instructor training requirements to the Aircraft Controlling Custodian for budgeting and quota management for all units under their cognizance.

(5) Coordinate with T/M/S NATOPS Model Managers to integrate CRM behaviors into all NATOPS publications, as practical, to include: minimizing errors, CRM, TCRM, cockpit interruptions and distractions, interfacing with automation, specific CRM-related crew responsibilities, and standardized CRM verbiage.

(6) Perform annual CRM assessments of all units under their cognizance, not to exceed an 18-month cycle, to ensure CRM program compliance and assist in the further development of CRM initiatives. A standardized CRM assessment checklist should be developed and distributed. CRM assessments may be conducted concurrently with NATOPS Unit Evaluations.

(7) Ensure applicable T/M/S CRM curriculums reflect current missions and aircraft configurations and integrate CRM behavioral skills. The IMM will approve any curriculum changes.

(8) Forward detailed copies of contractor-developed CRM materials to the IMM for review and concurrence.

(9) TRACOM air wing commanders (CTW) may designate in writing a PM for each aircraft T/M/S and/or SBT under their cognizance when designated as the CMM for multiple T/M/S and/or SBT. T/M/S CMMs are still responsible for the CRM programs of all units operating that T/M/S platform.

(10) Maintain cognizance over CRMIs, CRMFs and Unit Level Managers within the T/M/S or SBT.

g. Unit Level Manager.

(1) Unit Level Manager (ULM)s shall be a qualified CRMF, designated in writing and should normally be the Unit NATOPS Instructor.

(2) Ensure an adequate number of designated CRMFs are available to provide ground training and flight evaluations.

(3) Administer the CRM program as directed by the T/M/S CMM and this instruction.

(4) Ensure pertinent CRM-related issues, including T/M/S lessons learned, documented CRM breakdowns and specific areas of concern for the T/M/S are forwarded to the CRM via the PM. Ensure appropriate material is briefed to all aircrew.

h. Individual Aircrew.

(1) Ensure CRM is applied to all phases of flight planning, flight execution, and debriefing.

(2) Ensure the ULM is informed of all CRM-related incidents, including breakdown of CRM and hazard mitigation resulting from effective CRM practices. Focus on increasing mission effectiveness by learning from mistakes, employing positive CRM practices, mitigating preventable aircrew errors.

9. Records Management. Instruction, regardless per SECNAV M-5210.1C. Records created as a result of this of media and format, shall be managed per SECNAV M-5210.1C.

10. Forms and Reports. Enclosure (3) of this instruction may be locally produced to document CRM qualifications and shall be permanently maintained in the NATOPS Flight Personnel Training/Qualification Jacket Section II, Part C.

11. Change Recommendations. The effectiveness of the CRM program depends on the currency of this instruction and relies

heavily upon individual participation to facilitate improvements. Submit all recommended changes to:

School of Aviation Safety
Crew Resource Management
181 Chambers Ave Suite A Pensacola FL 32508-5271
DSN: 459-2088/4584
Commercial: (850) 452-2088/4584
Fax: (850) 452-2639
http://www.public.navy.mil/comnavsafecen/Pages/aviation/SAS/CRM/index.aspx

T. M. SHOEMAKER

Distribution:
SharePoint

DEFINITIONS

1. Aircrew. All aeronautically designated personnel serving in a crew position or performing a crew function in a naval aircraft. For the purpose of this instruction, aeronautically designated medical personnel, flight surgeons and aerospace physiologists are exempt from any annual CRM training requirements.

2. Crew Resource Management (CRM). The effective use of all available resources by individuals, aircrews and teams to safely and efficiently accomplish a mission or task. CRM also identifies and manages conditions that lead to error.

3. Crew Resource Management Critical Skills.

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

b. Assertiveness. An individual's willingness to actively participate, state and maintain a position, until convinced by the facts that other options are better. Assertiveness is respectful and professional, used to resolve problems appropriately and to improve mission effectiveness and safety.

c. Mission Analysis. The ability to develop short-term, long-term, and contingency plans and to coordinate, allocate and monitor crew and aircraft resources. Effective planning leads to flight conduct that removes uncertainty, increases mission effectiveness and enhances safety.

d. Communication. The ability to clearly and accurately send and acknowledge information, instructions or commands and provide useful feedback. Effective communication is vital to ensuring that all crewmembers understand aircraft and mission status.

e. Leadership. The ability to direct and coordinate the activities of other crewmembers or wingmen and to encourage the crew to work together as a team. There are two types of leadership:

(1) Designated Leadership - Leadership by authority, crew position, rank or title. This is the normal mode of leadership.

(2) Functional Leadership - Leadership by knowledge or expertise. Functional leadership is temporary and allows the most qualified individual to take charge of the situation.

f. Adaptability/Flexibility. The ability to alter a course of action based on new information, maintain constructive behavior under pressure and adapt to internal and external environmental changes. The success of a mission depends upon the crew's ability to alter behavior and dynamically manage crew resources to meet situational demands.

g. Situational Awareness. The degree of accuracy by which one's perception of the current environment mirrors reality. Maintaining a high level of situational awareness will better prepare crews to respond to unexpected situations.

4. Mission Effectiveness. The measurable results and impact of a mission based on how well it is executed. It is achieved through CRM using standard operating procedures, instructions and assessment of all available resources.

5. Time Critical ORM. Time Critical ORM is the level of risk management applied in the execution phase of training and operations to control hazards introduced by unexpected events and changes to the plan. TCRM is the execution tool for CRM and is the link between ORM and the seven critical skills of CRM. CRM is the foundational skill set that enables proper use of TCRM.

6. CRM Integrated Syllabus. A T/M/S or SBT-specific syllabus in which the CRM critical skills are integrated throughout academic, simulator and flight instruction using the instructional strategies of information, demonstration, practice, feedback and relevance.

7. Naval Aircraft. For the purpose of this instruction, any aircraft assigned to a U.S. Navy (USN), U.S. Navy Reserve (USNR), U.S. Marine Corps (USMC), or U.S. Marine Corps Reserve

(USMCR) unit. This definition includes Unmanned Aerial Systems (UAS) and other remotely controlled flight vehicles.

8. Naval Aviation Activity. Any squadron, unit, or organization directly involved in the operation of USN or USMC aircraft.

9. Simulator Based Training (SBT) Command. Any CNATRA or flight training squadron whose entire curriculum is computer based.

10. CRM Instructional Model Manager (IMM). Naval Safety Center's Naval School of Aviation Safety is designated as the CRM Instructional Model Manager.

11. CRM T/M/S or SBT Community Model Manager (CMM). A unit commander responsible for administering the CRM program for a specific aircraft model. FRS commanding officers and CTWs will usually be designated as a CMM with specific CMM assignments listed in enclosure (4). Any activity operating aircraft T/M/S not listed in enclosure (4) shall comply with this instruction and act as T/M/S CMM for that specific aircraft.

12. CRM T/M/S or SBT Community Program Manager (PM). A CRMI who performs administrative responsibilities for the CRM program and who is given written authority to act on behalf of the CMM in CRM-related matters. The PM is responsible for the development and distribution of standardized briefing material and shall be an CRM or above and be designated by the CMM. T/M/S NATOPS Program Managers will usually be designated as a CRM PM.

13. CRM T/M/S or SBT Community Assistant Program Manager. A CRMI who performs administrative responsibilities for the CRM program and who has written authority to act on behalf of the CMM and Program Manager in CRM-related matters. Community Assistant Program Managers shall be an O-3 or above and be designated by the CMM.

14. CRM Unit Level Manager (ULM). A NATOPS-qualified CRMI or CRMF designated by the commanding officer who is responsible for a unit CRM program. Unit NATOPS Instructors will usually be

designated as a ULM. ULMs shall be an O-2 or above. Distance learning may be utilized in situations where the CMM and ULM are not co-located.

15. CRM Instructor (CRMI). A NATOPS-qualified individual who has successfully completed a CRMI course provided by the IMM and was previously designated as a CRMF. CRMIs should be an O-3/E-5/GS-12 or above and shall be designated by the commanding officer. The CRMI qualification is a lifetime qualification, but individuals must be approved by the T/M/S or SBT CMM prior to conducting any training. Civilians may be designated as a CRMI upon completion of the above requirements. (O-2 CRMIs: O-2s recommended as CRMIs shall have completed at least 1 deployment, shall be an O-3 Select, should have at least 12 months remaining in the unit and shall have an approval letter from the T/M/S PM. All supporting documentation must be submitted by the T/M/S PM when a CRMI quota is requested.)

16. CRM T/M/S or SBT Facilitator (CRMF). A NATOPS-qualified individual who has successfully completed a CRMF course provided by the T/M/S or SBT CMM. CRMFs shall meet minimum experience levels and prerequisites determined by the CMM and shall be designated by the commanding officer. The CRMF qualification is not a lifetime qualification and is maintained only as long as the aircrew maintains a T/M/S or SBT NATOPS qualification.

NAVAL AIR SYSTEMS COMMAND (NAVAIRSYSCOM) CRM PROGRAM

1. Purpose. The provisions of the CRM instruction apply to all NAVAIRSYSCOM activities, but specific portions are modified to accommodate the unique nature of NAVAIRSYSCOM and recognize the extensive CRM training involved in test and evaluation missions.

2. Program Administration. The NAVAIRSYSCOM Aviation Safety Director (N09F/5.0F) works with the Commander, Naval Air Forces NATOPS Officer (N455) as the NAVAIRSYSCOM CRM Program Administrator, managing the CRM program for NAVAIRSYSCOM and maintaining this enclosure.

3. Program Modifications:

a. CRM Qualification and Life Cycle Training Model. Activities shall ensure CRM introductory ground training, initial CRM flight training and initial T/M/S specific CRM ground training are completed per paragraph 7(b). In instances where required formal training was not performed, activities may provide this training with approval from the applicable CMM.

b. CRM Training for Project Specialists. Project specialists, as defined in reference (a), are required to complete the CRM ground portions of both initial T/M/S specific training and annual T/M/S specific recurrent training.

c. CRMI Requirements. Activities shall designate a minimum of one CRMI. CRMIs should have a minimum of 12 months left at the activity. Government civilians designated as CRMIs shall be GS-12 or above.

d. CRMFs. Activity CRMIs may modify CRMF training to only include local differences for CRMFs designated at a previous command. CRMFs may evaluate CRM for each aircraft T/M/S in which they hold a current NATOPS qualification. USN Test Pilot School attendance is considered a "short term NATOPS qualification expiration" and will allow CRMF qualification.

e. CRM in Aircraft without a NATOPS Program. Aircrew, UAS operators and project specialists for aircraft without a NATOPS program may receive CRM initial and recurrent training from a Federal Aviation Administration (FAA) accredited contract flight training facility.

NAVAIRSYSCOM N09F/5.0F shall act as T/M/S CMM and designate an adequate number of CRMIs to provide qualification of CRMFs. Qualifications equivalent to a NATOPS check will meet CRMI and CRMF requirements for these aircraft. CRM designations, training, and extensions granted using this paragraph are considered equivalent to those for aircraft with a NATOPS program.

f. Liaison with the CMM. CRMIs and CRMFs shall liaise with CMMs in each of the T/M/S operated by their activity to ensure use of the most up to date CRM training material. Aircraft without a NATOPS program, CMM, or CRM initial and recurrent training shall train using a FAA approved program.

CRM TRAINING & EVALUATION RECORD

1. NAME *(Last, first, middle initial)*:	2. RANK:	3. EDIPI NUMBER:

Note: This form shall be permanently maintained in the NATOPS Flight Personnel Training/Qualification Jacket (Section II, Part C).

CRM IMM Instructor Course 4. Date: _____ 5. Location: _____

CRM FACILITATOR TRAINING

6. T/M AIRCRAFT	7. UNIT	8. DATE

GROUND TRAINING / FLIGHT EVALUATIONS

Note: Valid for 12 months from the last day of the month in which training/evaluation was completed.
Note: Renewal flight evaluations may be completed within 60 days preceding the expiration of the current qualification.

9. T/M AIRCRAFT	10. UNIT	11. GROUND / FLIGHT	12. INITIAL / RENEWAL	13. DATE COMPLETED	14. EXPIRATION DATE

EXTENSIONS

15. T/M AIRCRAFT	16. UNIT	17. GROUND / FLIGHT	18. AUTHORITY	19. EXPIRATION DATE

CRM CURRICULUM MODEL MANAGERS (CMM) AND INSTRUCTOR REQUIREMENTS

Specific T/M/S CRM Curriculum Model Managers, CRM Instructor requirements, and controlling custodians are listed below. In order to reinforce CRM in NATOPS, the CRM CMM shall be the NATOPS Model Manager to maximum extent possible. To facilitate an effective assignment of Model Managers, any changes or updates to this list shall be authorized by the CRM IMM. The table indicates both the minimum number and type of CRM Instructors that must be trained and designated at the CMM command. For platforms not listed below, the NATOPS Model Manager or equivalent shall serve as the CRM MM.

AIRCRAFT	T/M/S or SBT CURRICULUM MODEL MANAGER COMMAND	CONTROLLING CUSTODIAN	MINIMUM NUMBER/ TYPE INSTRUCTOR*
AH-1	HMLAT-303	MCCDC	1P
AV-BB	VMAT-203	MCCDC	1P
C-2	VAW-120	COMNAVAIRLANT	1P, 1LM
C-9/C-20/C-40	COMFLELOGSUPP WING	COMNAVAIRFORES	1P, 1CC, 1LM
C/UC-12 (USN)	NAF Atsugi	COMNAVAIRPAC	1P, 1NAC
C/UC-12 (USMC)	VMR(DET) Belle Chasse JRB	MCCDC	1P, 1NAC
UC-35	VMR(DET) Andrews	COMMARFORES	1P, 1NAC
C-26	NAS Sigonella	COMNAVAIRLANT	1P, 1NAC
C-130	COMFLELOGSUPPWING	COMNAVAIRFORES	1P, 1FE, 1LM
KC-130J	KC-130J FRD	MCCDC	1P, 1CM
KC-130T	VMGR-452	MCCDC	1P, 1NV, 1FE, 1CM
E-2	VAW-120	COMNAVAIRPAC	1P, 1N
E-6	VQ-7	COMNAVAIRPAC	1P, 1FE, 1ACO, 1RO, 1IFT, 1ACS
EA-6B	VMAQT-1	MCCDC	1P, 1N
EA-18G	VAQ-129	COMNAVAIRPAC	1P, 1N
EP-3	VP-30	COMNAVAIRPAC	1P, 1N, 1FE, 1NAC, 1NAO
F-5 (USN/USMC)	VFC-13	COMNAVAIRFORES	1P
F-16	NAWDC	COMNAVAIRPAC	1P
F/A-18A-D	VFA-106	COMNAVAIRPAC (USN) MCCDC (USMC)	1P, 1N
F/A-18E-F	VFA-122	COMNAVAIRPAC	1P, 1N

F/A-18F	VFA-122	COMNAVAIRPAC	1P, 1N
F/A-18D (USMC)	VMFAT-101	MCCDC	1P, 1N
F-35B	VMFAT-501	MCCDC	1P
F-35C	VFA-101	COMNAVAIRPAC	1P
UH-1	HMLAT-303	MCCDC	1P, 1NAC
CH-46E	HMM-774	MCCDC	1P, 1NAC
CH-53E	HMHT-302	MCCDC	1P, 1NAC
MH-53E	AWSTS	MCCDC	1P, 1NAC
H-60B	HSM-40	COMNAVAIRLANT	1P, 1NAC
H-60F/H	HSC-3	COMNAVAIRPAC	1P, 1NAC
MH-60R	HSM-41	COMNAVAIRPAC	1P, 1NAC
MH-60S	HSC-3	COMNAVAIRPAC	1P, 1NAC
MV-22	VMMT-204	MCCDC	1P, 1NAC
P-3	VP-30	COMNAVAIRLANT	1P, 1N, 1FE, 1NAC
P-8	VP-30	COMNAVAIRLANT	1P, 1N, 1NAC
S-3	VX-30	COMNAVAIRPAC	1P, 1N
T-1	TRAWING 6	CNATRA	1P, 1N
T-6A	TRAWING 6	CNATRA	1P
T-6B	TRAWING 5	CNATRA	1P
T-34	TRAWING 4	CNATRA	1P
T-39	TRAWING 6	CNATRA	1P, 1N
T-44	TRAWING 4	CNATRA	1P
T-45	TRAWING 2	CNATRA	1P
TC-12	TRAWING 4	CNATRA	1P
TH-57	TRAWING 5	CNATRA	1P
UAS(M) RQ-7	VMU-1	MCCDC	1UAC, 1AVO
UAS(M) RQ-21	VMU-2	MCCDC	1P, 1CP
UAS(N) MQ-8B/C	HSC-3	COMNAVAIRPAC	1AVO, 1MPO
UAS(N) MQ-4C	VUP-19	COMNAVAIRLANT	NSGA
VH-3/VH-60	HMX-1	COMMARFORLANT	1P, 1NAC

THREAT AND ERROR MANAGEMENT (TEM) MODEL

1. The Threat and Error Management (TEM) model is a conceptual framework that assists in understanding, from an operational perspective, the inter-relationship between safety and human performance in dynamic and challenging operational contexts. TEM development is closely coupled with advanced human factors research which acknowledges that human error is not only the most likely cause of most aviation mishaps, but that human error is not entirely preventable. TEM is to be employed as a unique tool which can facilitate effective application of CRM's seven critical skills, identify and manage threats and errors, and prevent potentially fatal mishaps.

2. Three basic components (threats, errors, and undesired aircraft states) compose the TEM model. As threats and errors must be continually managed by aircrew in even routine operations, they both further the potential of undesired aircraft states. Effective management of any undesired aircraft state is essential to TEM as it represents the last opportunity to avoid unsafe conditions prior to a mishap.

3. Events that occur beyond the influence of the aircrew and must be managed to maintain appropriate margins of safety are defined as threats. Examples are adverse meteorological conditions, congested airspace, aircraft malfunctions, or errors committed by people outside of the aircraft. Aircrew can anticipate some threats, but others can be unexpected and can only be managed through effective use of the CRM critical skills. Latent threats, such as equipment design issues or shortened turn-around schedules, may not be immediately obvious but can be identified through safety analysis.

4. Aircrew actions or inactions that lead to deviations from organizational intentions or expectations are defined as errors. Examples are an inability to maintain flight parameters, incorrect execution of a procedure, or misinterpretation of ATC instructions. An error's potential to contribute to an undesired aircraft state depends upon the timeliness of its detection and the correct management of that error.

5. Aircrew-induced aircraft performance deviations, misapplication of flight controls, or incorrect systems configuration associated with reduced margins of safety are defined as undesired aircraft states. Resulting from ineffective threat and/or error management, unidentified or undesired aircraft states can result in mishaps.

6. The seven critical CRM skills provide a means of mission accomplishment by helping aircrew manage the threats and errors with TEM acting as a methodology for the use of those skills. If CRM is a tool, then TEM is the toolbox that includes CRM. Mission effectiveness is the primary objective of TEM with safe operations emerging as an offshoot.

7. Depicted in Figure 1, the model assumes that aircrew can limit the number of errors by appropriately using their CRM skills when faced with threats. Further limiting errors, aircrew can identify threats and develop practical mitigation through adequate preparation, enabling operations within the "Mission Effectiveness" zone of the model.

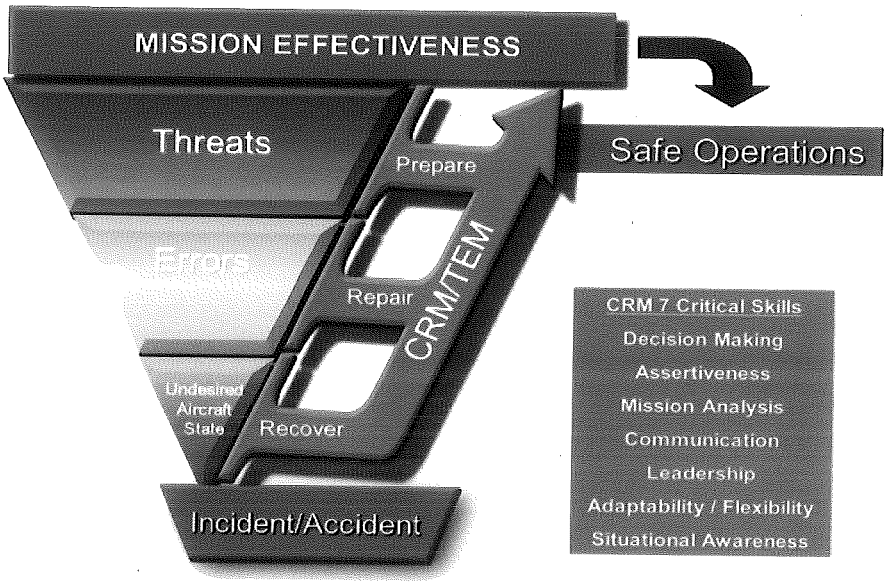

Figure 1 – US Navy TEM Model

8. Improving the likelihood of mission effectiveness, TEM focuses on data collection to conduct proactive identification of threats and errors prior to any aircraft operations. Aviation Safety Awareness Program (ASAP) and Military Flight Operations Quality Assurance (MFOQA) programs are important mechanisms to perform trend analysis, threat mitigation, error reduction and mishap prevention. These programs bring a shift in focus from a reactive approach to a proactive mindset applied to mishap prevention.