FM 5-19

Composite Risk Management

AUGUST 2006

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Composite Risk Management

Contents

		Page
	PREFACE	**iv**
Chapter 1	**THE CRM PROCESS**	**1-1**
	The Steps	1-2
	Tracking and Documentation	1-15
Chapter 2	**RESPONSIBILITIES**	**2-1**
	Commander	2-1
	S3	2-2
	Staff (All)	2-2
	Leader	2-2
	Individual	2-3
Chapter 3	**APPLICATION TO TLP**	**3-1**
	Parallel Planning	3-1
	CRM Techniques and TLP	3-5
	The Individual Soldier's Role	3-15
Chapter 4	**APPLICATION TO THE MDMP**	**4-1**
	Relationship to C2	4-1
	Alignment with the MDMP	4-2
	Steps of the MDMP	4-4
Chapter 5	**APPLICATION TO TRAINING MANAGEMENT**	**5-1**
	Application to the SAT Process	5-1
	Integration into Realistic Training	5-2

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Chapter 6 APPLICATION TO OTHER FUNCTIONAL AREAS..... 6-1
Command Issues..... 6-1
Command Emphasis 6-2
Appendix A INSTRUCTIONS AND SAMPLE FORM.....A-1
Appendix B EXAMPLES FOR OPERATIONS..... B-1
GLOSSARY.....Glossary-1
SECTION I – ACRONYMS AND ABBREVIATIONS.....Glossary-1
SECTION II – TERMS Glossary-6
REFERENCES References-1
INDEX.....Index-1

Figures

Figure 1-1. CRM.....1-1
Figure 1-2. CRM process.....1-3
Figure 1-3. Assessment factors 1-4
Figure 1-4. Risk assessment matrix 1-8
Figure 3-1. TLP and risk management steps.....3-2
Figure 3-2. MDMP and TLP 3-3
Figure 3-3. Information flow 3-4
Figure 3-4. Sample hasty risk assessment.....3-6
Figure 3-5. Platoon WARNO.....3-7
Figure 3-6. Risk assessment factors 3-9
Figure 3-7. Sample verbal order 3-12
Figure 3-8. Sample graphic overlay.....3-13
Figure 3-9. Sample terrain sketch.....3-14
Figure 4-1. CRM aligned with C2.....4-2
Figure 4-2. CRM aligned with the MDMP 4-3
Figure 4-3. Input and output for the MDMP 4-4
Figure 4-4. Sample WARNO.....4-6
Figure 4-5. Sample overlay.....4-7
Figure 4-6. Sample staff estimate.....4-8
Figure 4-7. Sample risk assessment 4-10

Figure 4-8. Risk management application to step 2 of the MDMP 4-11
Figure 4-9. Sample risk assessment for G1/AG/S1 4-12
Figure 4-10. Sample risk assessment for G2/S2 4-12
Figure 4-11. Sample risk assessment for G3/S3 4-13
Figure 4-12. Sample risk assessment for G4/S4 4-13
Figure 4-13. Sample risk assessment for G5/S5 4-14
Figure 4-14. Sample risk assessment for G6/S6 4-14
Figure 4-15. Sample risk assessment for air and missile defense coordination..... 4-15
Figure 4-16. Sample risk assessment for fire support coordination 4-15
Figure 4-17. Sample risk assessment for engineer coordination 4-16
Figure 4-18. Sample risk assessment for NBC coordination 4-16
Figure 4-19. Sample risk assessment for medical coordination 4-17
Figure 4-20. Sample execution paragraph..... 4-18
Figure 4-21. Risk assessment matrix..... 4-20
Figure 5-1. Comparison..... 5-2
Figure A-1. Sample DA Form 7566, page 1.....A-2
Figure A-2. Sample DA Form 7566, page 2.....A-3
Figure B-1. Sample worksheet for tactical road march scenario B-3
Figure B-2. Sample worksheet for aviation scenario B-7
Figure B-3. Sample worksheet for field artillery scenario.....B-10
Figure B-4. Sample worksheet for base operations scenario B-14
Figure B-5. Sample worksheet for POV/party scenario B-15
Figure B-6. Sample worksheet for weekend pass scenario...B-16

Tables

Table A-1. Worksheet Instructions A-1

Preface

Today's Army is challenged by a wide range of threats and operating environments. These challenges, plus new technologies, require our leaders to use creative measures to provide positive protection to our Soldiers and equipment.

In April 1998, Field Manual (FM) 100-14 introduced to the Army the first doctrinal publication on risk management. It detailed the application of a step-by-step process to conserve combat power and resources. This milestone manual outlined a framework that leaders could use to make force protection a routine part of planning, preparing, and executing operational, training, and garrison missions.

Before the outset of the global war on terrorism it became apparent that FM 100-14 would require updating to meet the needs of the future. Army assessments also indicated that the existing manual needed to be expanded to provide clear standards and guidance on how the risk management process was to be applied. This led to this current revision. During development of this revision the Army broadened its understanding of the risk management process to encompass all operations and activities, on and off duty. This holistic approach focuses on the composite risks from all sources rather than the traditional practice of separating accident from tactical hazards and associated risks. This revision has been refocused to clearly reflect the Army's new composite approach, and has been retitled *Composite Risk Management* (CRM). CRM represents a culture change for the Army. It departs from the past cookie cutter safety and risk management mentality through teaching Soldiers "how to think" rather than telling them "what to think."

This manual expands the context of the original FM by focusing on the application of composite risk management to the military decisionmaking process (MDMP) and the Army training management system. It further assigns the responsibilities for conducting risk management training during initial entry training and professional military education. It is a tool that works in conjunction with the Army's on-going initiative to firmly attach CRM to all Army processes.

It is a milestone document for the standardization and institutionalization of the techniques, tools, and procedures that lead to sound decisionmaking and valid risk acceptance by leaders at all levels. This revision is a full rewrite of FM 100-14. It marks a break with the past by integrating the CRM process into Army operations. CRM is not a stand-alone process, a "paper work" drill, or an add-on feature. Rather, it is used as a fully-integrated element of detailed planning. It must be so integrated as to allow it to be executed intuitively in situations that require immediate action. CRM should be viewed as part of the military art interwoven throughout the Army's military decisionmaking and training management cycles.

This manual applies to the Active Army, the Army National Guard/Army National Guard of the United States, and the United States Army Reserve unless otherwise stated.

The proponent of this manual is U.S. Army Training and Doctrine Command. Send comments and recommendations on Department of the Army (DA) Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Commander, U.S. Army Training and Doctrine Command, ATTN: ATCS-S, Fort Monroe, Virginia 23651-5000.

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Chapter 1

The CRM Process

Composite risk management (CRM) is the Army's primary decisionmaking process for identifying hazards and controlling risks across the full spectrum of Army missions, functions, operations, and activities. (See Figure 1-1.)

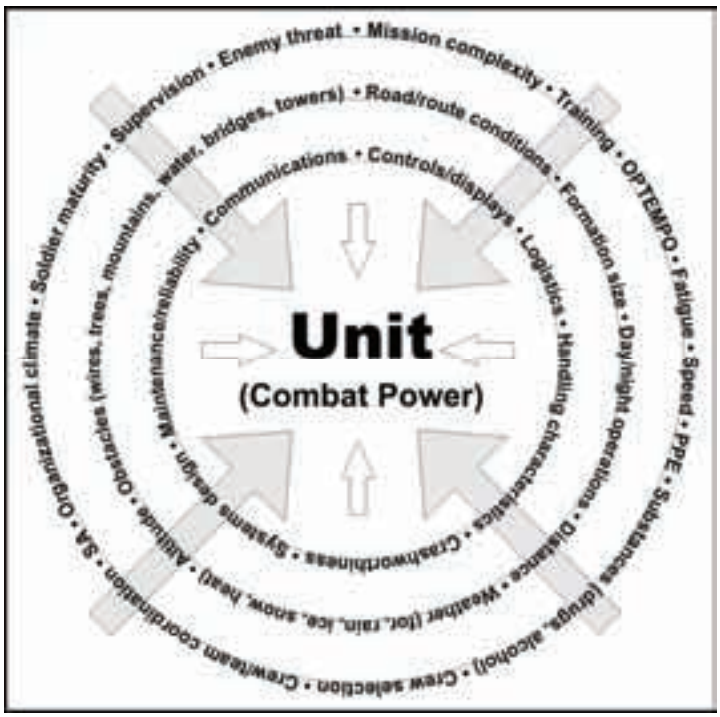

Figure 1-1. CRM

CRM is a decisionmaking process used to mitigate risks associated with all hazards that have the potential to injure or kill personnel, damage or destroy equipment, or otherwise impact mission effectiveness. In the past, the Army separated risk into two categories, tactical risk and accident risk. While these two areas of concern remain, the primary premise of CRM is that it does not

matter where or how the loss occurs, the result is the same—decreased combat power or mission effectiveness. The guiding principles of CRM are as follows:

- Integrate CRM into all phases of missions and operations. Effective CRM requires that the process be integrated into all phases of mission or operational planning, preparation, execution, and recovery.

- Make risk decisions at the appropriate level. As a decisionmaking tool, CRM is only effective when the information is passed to the appropriate level of command for decision. Commanders are required to establish and publish approval authority for decisionmaking. This may be a separate policy, specifically addressed in regulatory guidance, or addressed in the commander's training guidance. Approval authority for risk decisionmaking is usually based on guidance from higher HQ.

- Accept no unnecessary risk. Accept no level of risk unless the potential gain or benefit outweighs the potential loss. CRM is a decisionmaking tool to assist the commander, leader, or individual in identifying, assessing, and controlling risks in order to make informed decisions that balance risk costs (losses) against mission benefits (potential gains).

- Apply the process cyclically and continuously. CRM is a continuous process applied across the full spectrum of Army training and operations, individual and collective day-to-day activities and events, and base operations functions. It is a cyclic process that is used to continuously identify and assess hazards, develop and implement controls, and evaluate outcomes.

- Do not be risk averse. Identify and control the hazards; complete the mission.

THE STEPS

1-1. CRM is a five-step process:

- Step 1 – Identify hazards.
- Step 2 – Assess hazards to determine risk.

- Step 3 – Develop controls and make risk decisions.
- Step 4 – Implement controls.
- Step 5 – Supervise and evaluate.

Steps 1 and 2 are assessment steps, steps 3 through 5 are management. See Figure 1-2.

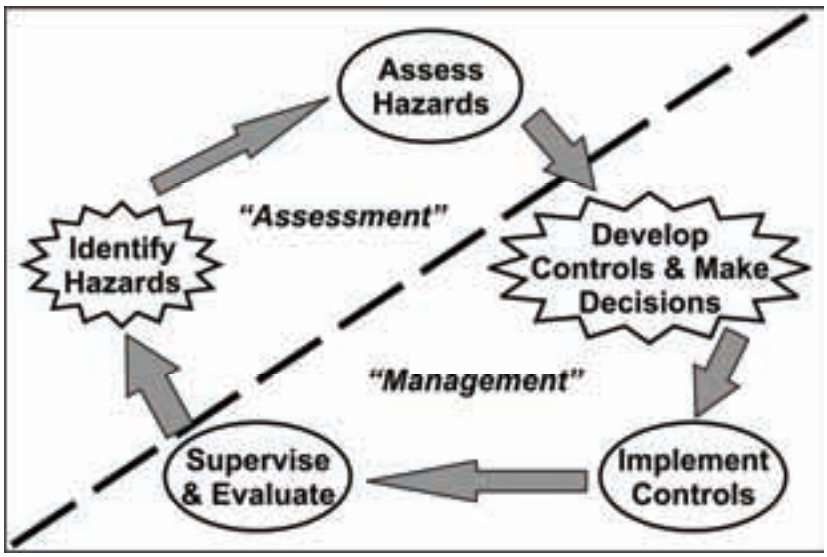

Figure 1-2. CRM process

STEP 1- IDENTIFY HAZARDS

1-2. What is a hazard? A hazard is a condition with the potential to cause injury, illness, or death of personnel; damage to or loss of equipment or property; or mission degradation. A hazard may also be a situation or event that can result in degradation of capabilities or mission failure. Hazards exist in all environments—combat operations, stability operations, base support operations, training, garrison activities, and off-duty activities.

1-3. How are hazards identified? The factors of mission, enemy, terrain and weather, troops and support available, time available, and civil considerations (METT-TC) serve as a standard format for identification of hazards, on-duty or off-duty. The factors of METT-TC are used because they are institutionalized in the Army. They are part of the common knowledge imparted through the Army's professional military education and initial entry training. See Figure 1-3.

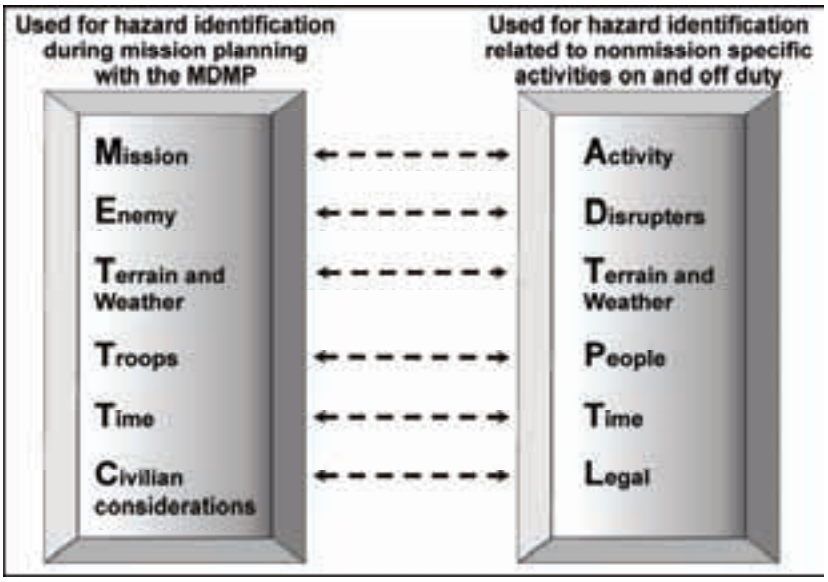

Figure 1-3. Assessment factors

1-4. Some other resources and tools to assist in the identification of hazards are as follows:

- Experience and other experts.
- Regulations, manuals, standing operating procedures (SOPs), policies.
- Accident data.
- War-gaming what-if scenarios.
- Risk assessment matrices.
- Readiness assessments.
- Cause and effect diagrams.
- Change analysis.
- Energy trace and barrier analysis.
- Logic diagrams.
- Mapping techniques.
- Training assessments.
- After-action reviews (AARs).

Sources of Hazards and Risks

1-5. Hazards may arise from any number of areas. Hazards can be associated with enemy activity, accident potential, weather or environmental conditions, health, sanitation, behavior, and/or material or equipment. CRM does not differentiate between the sources of the hazard. The loss of personnel, equipment, or material due to any hazard has the

same disruptive impact on readiness or mission capabilities no matter what the source. An individual may have a greater influence to effect change in hazards arising from behavior, accident potential, equipment, or material than over hazards that arise from enemy action. The bottom-line is the effect of the hazard, not its source.

The Role of METT-TC in Hazard Identification

1-6. The factors of METT-TC provide a standardized methodology for addressing both threat and hazard-based risk for tactical and nontactical operations and off-duty activities. METT-TC is primarily used as part of the MDMP for tactical missions. However, the same thought process is equally effective for considering nontactical operations and the off-duty environment. When applied in a tactical or operational environment, the factors of METT-TC require no explanation. The same factors can be applied in nonmilitary activities. For the sake of clarity, however, the terms are changed to reflect the nonmilitary application as depicted in Figure 1-3.

1-7. For garrison and off-duty activities the METT-TC factors become activities, disrupters, terrain and weather, personnel, time, and legal considerations. Both processes address similar considerations expressed in different terms.

Mission

1-8. The nature of the operational mission may imply specific hazards. Some missions are inherently more dangerous than others. Leaders look for hazards associated with the complexity of higher HQ plans and orders such as a particularly complex scheme of maneuver. The use of a fragmentary order (FRAGO) in-lieu of a detailed operation order (OPORD) or operation plan (OPLAN) also may raise the risk due to the possibility of misunderstanding.

Activity

1-9. This pertains to garrison on- and off-duty activities. The classic example is a risk assessment performed in preparation of a long holiday weekend. It could also be performed for a recreational or sporting event or for travel associated with leave, pass, or temporary duty (TDY). Junior leaders play a particularly important role in making assessments that address the behavior traits of individual Soldiers. Events where there is alcohol present or the potential for substance abuse require special focus.

Enemy

1-10. Commanders look for enemy presence or capabilities that pose hazards to the operation or mission. What can the enemy do to defeat my operation? Intelligence preparation of the battlefield (IPB) is a dynamic staff process that is critical to identifying enemy threat. IPB supports threat based risk assessments by identifying opportunities and any constraints the battlefield environment offers to both enemy and friendly forces. It also portrays a picture of enemy capabilities and vulnerabilities.

Disrupters

1-11. In the on- and off-duty garrison environment enemy considerations take the form of outside influences that may affect or impact a planned event or activity.

Terrain and Weather

1-12. The factors of observation and fields of fire, avenues of approach, key and decisive terrain, obstacles, and cover and concealment (OAKOC) are used to identify and assess hazards impacting on mission type operations. Pretrip checklists are useful in making assessments associated with nonmission activities. Common terrain hazards are elevation, altitude, road surfaces, curves, grades, and traffic density.

1-13. Common weather hazards are cold, ice, snow, rain, fog, heat, humidity, wind, dust, visibility and illumination. Whether planning a tactical mission or out-of-town leave, include the aspect of terrain. Weather can also create very specific hazards. Leaders assess these factors for both mission and nonmission activities.

Troops (or People) and Equipment

1-14. For mission-related risk assessments, the term troops is used to consider hazards that are associated with the level of training, staffing, and equipment maintenance and condition. It also includes morale, availability of supplies, and services to include the physical and emotional health of the Soldiers.

1-15. For nonmission activities, the term people is used to include Soldiers, their dependents, civilian workers, and other people whether connected to the activity or not. Some examples of other-than-mission hazards may include such things as sexual assault, domestic violence, substance abuse, sexually transmitted diseases, and other behavioral or medical conditions.

Time

1-16. Insufficient time for mission preparation often forces commanders to accept greater risk in planning, preparation, and execution of orders and plans associated with mission planning. To avoid or mitigate the risk associated with inadequate time for planning, leaders should allow subordinates two-thirds of the available planning time as a control. For nonmission activities insufficient time is more of a matter of haste as opposed to availability. This is especially critical during holiday periods where the zeal of young Soldiers to get home may lead them to depart duty stations without sufficient rest.

Civil or Legal Considerations

1-17. This function expands the consideration of hazards to include those hazards that a tactical mission may pose to the civilian populace and noncombatants in the area of operations. The objective is to reduce the amount of collateral damage to civilians and noncombatants. Hazards are also created by the presence of a large civilian population and their efforts to conduct day-to-day living during the course of a mission. High civilian

traffic densities may present hazards to convoys and maneuver schemes. Such diverse elements as insurgents, riots, and criminal activity must also be assessed.

1-18. For nonmission activities, the term legal is used to address those legal, regulatory, or policy considerations that may impact a desired activity or limit a leader's or individual's course of action (COA).

STEP 2-ASSESS THE HAZARDS

1-19. This process is systematic in nature and uses charts, codes and numbers to present a methodology to assess probability and severity to obtain a standardized level of risk. The five-step CRM process is a method for expressing and depicting a normally intuitive and experience-based thought process. The risk management process is a disciplined application of five steps to obtain and express a risk level in terms that are readily understood at all levels of command.

> ***Note***: Technical competency, operational experience, and lessons-learned weigh higher than any set of alpha-numeric codes. Mathematics and matrixes are not a substitute for sound judgment.

1-20. Hazards are assessed and risk is assigned in terms of probability and severity of adverse impact of an event/occurrence. This step considers the risk or likelihood of an event or incident adversely impacting mission, capabilities, people, equipment, or property. "What are the odds (probability) of something going wrong and what is the effect (severity) of the incident if it does occur?"

1-21. Hazards and associated risks are assessed during the mission analysis, COA development, analysis, and rehearsal and execution steps of the MDMP and must consider both mission and nonmission related aspects that may have an impact. The end result of this assessment is an initial estimate of risk for each identified hazard expressed in terms of extremely high, high, moderate, or low as determined from the standardized application of the risk assessment matrix. (See Figure 1-4.)

1-22. There are three substeps in this step:

- Assess the probability of the event or occurrence.
- Estimate the expected result or severity of an event or occurrence.
- Determine the specified level of risk for a given probability and severity using the standard risk assessment matrix. (See Figure 1-4.)

RISK ASSESSMENT MATRIX						
		Probability				
Severity		Frequent A	Likely B	Occasional C	Seldom D	Unlikely E
Catastrophic	I	E	E	H	H	M
Critical	II	E	H	H	M	L
Marginal	III	H	M	M	L	L
Negligible	IV	M	L	L	L	L
E – Extremely High		H – High		M – Moderate		L – Low

Figure 1-4. Risk assessment matrix

Assess Each Hazard on the Probability of the Event or Occurrence

1-23. Probability is the likelihood of an event. This is your estimate, given what information you know and what others have experienced. The probability levels estimated for each hazard are based on the mission, COA, or frequency of a similar event. For the purpose of CRM, there are five levels of probability—frequent, likely, occasional, seldom, and unlikely:

- Frequent – Occurs very often, known to happen regularly. In illustration, given 500 or so exposures to the hazard, expect that it will definitely happen to someone. Examples of frequent occurrences are vehicle rollovers, rear-end collisions, and heat injury during a battalion physical training run with hot weather or nonacclimated Soldiers.
- Likely – Occurs several times, a common occurrence. In illustration, given 1000 or so exposures without proper controls, it will occur at some point. Examples might include improvised explosive devices (IEDs), wire strikes for aircraft, controlled flights into terrain, and unintentional weapons discharges.
- Occasional – Occurs sporadically, but is not uncommon. You may or may not get through your deployment without it happening. Some examples might include unexploded ordnance (UXO) and fratricide.
- Seldom – Remotely possible, could occur at some time. Usually several things must go wrong for it to happen. Examples might include things like heat-related death or electrocution.
- Unlikely – Can assume will not occur, but not impossible. Examples might include detonation of containerized ammunition during transport.

Estimate the Expected Result or Severity of an Occurrence

1-24. Severity is expressed in terms of the degree to which an incident will impact combat power, mission capability, or readiness. The degree of severity estimated for each hazard is based on knowledge of the results of similar past events and is addressed in the following four levels used on the risk assessment worksheet:

- Catastrophic –
  - Complete mission failure or the loss of ability to accomplish a mission.
  - Death or permanent total disability.
  - Loss of major or mission-critical systems or equipment.
  - Major property or facility damage.
  - Severe environmental damage.
  - Mission-critical security failure.
  - Unacceptable collateral damage.
- Critical –
  - Severely degraded mission capability or unit readiness.
  - Permanent partial disability or temporary total disability exceeding three months time.
  - Extensive major damage to equipment or systems.
  - Significant damage to property or the environment.
  - Security failure.
  - Significant collateral damage.
- Marginal –
  - Degraded mission capability or unit readiness.
  - Minor damage to equipment or systems, property, or the environment.
  - Lost days due to injury or illness not exceeding three months.
  - Minor damage to property or the environment.
- Negligible –
  - Little or no adverse impact on mission capability.
  - First aid or minor medical treatment.
  - Slight equipment or system damage, but fully functional or serviceable.
  - Little or no property or environmental damage.

Determine Specified Level of Risk

1-25. Using the standard risk assessment matrix at Figure 1-4, probability and severity for each identified hazard are converted into a specified level of risk. This matrix provides an assessment of probability and severity expressed in terms of a standard level of risk. This assessment is an estimate, not an absolute. It may or may not be indicative of the relative danger of a given operation, activity, or event. The levels of risk are listed in the lower left corner of the matrix. All accepted residual risk must be approved at the appropriate level of command.

- Extremely High Risk – Loss of ability to accomplish the mission if hazards occur during mission. A *frequent* or likely probability of catastrophic loss (IA or IB) or *frequent* probability of critical loss (IIA) exists. This implies that the risk associated with this mission, activity, or event may have severe consequences beyond those associated with this specific operation or event. The decision to continue must be weighed carefully against the potential gain to be achieved by continuing this COA.
- High Risk – Significant degradation of mission capabilities in terms of the required mission standard, inability to accomplish all parts of the mission, or inability to complete the mission to standard if hazards occur during the mission. *Occasional* to *seldom* probability of catastrophic loss (IC or ID) exists. A *likely* to *occasional* probability exists of a critical loss (IIB or IIC) occurring. *Frequent* probability of *marginal* losses (IIIA) exists. This implies that if a hazardous event occurs, serious consequences will occur. The decision to continue must be weighed carefully against the potential gain to be achieved by continuing this COA.
- Moderate Risk – Expected degraded mission capabilities in terms of the required mission standard and will result in reduced mission capability if hazards occur during mission. An *unlikely* probability of catastrophic loss (IE) exists. The probability of a *critical* loss is *seldom* (IID). *Marginal* losses occur with a *likely* or *occasional* probability (IIIB or IIIC). A *frequent* probability of negligible (IVA) losses exists.
- Low Risk – Expected losses have little or no impact on accomplishing the mission. The probability of *critical* loss is *unlikely* (IIE), while that of *marginal* loss is *seldom* (IIID) or *unlikely* (IIIE). The probability of a *negligible* loss is *likely or less* (IVB through (IVE). Expected losses have little or no impact on accomplishing the mission. Injury, damage, or illness are not expected, or may be minor and have no long term impact or effect.

STEP 3 - DEVELOP CONTROLS AND MAKE RISK DECISIONS

1-26. In step 2, hazards were assessed and an initial risk level was determined. In this step, controls are developed and applied. The hazard is reassessed to determine a residual risk. Risk decisions are always based on the residual risk. The process of developing and applying controls and reassessing risk continues until an acceptable level of risk is achieved or until all risks are reduced to a level where benefits outweigh the potential cost. This step is accomplished during the COA development, COA analysis, COA comparison, and COA approval of the MDMP.

Develop Controls

1-27. After assessing each hazard, leaders (individuals) develop one or more controls that either eliminate the hazard or reduce the risk (probability and/or severity) of a hazardous incident occurring. In developing controls leaders must consider the reason for the hazard, not just the hazard itself.

1-28. Controls can take many forms, but normally fall into one of three basic categories:

- Educational (awareness) Controls. These controls are based on the knowledge and skills of units, organizations, or individuals. It includes their awareness of the hazard and control. Effective educational control is implemented through individual and collective training that ensures performance to standard.
- Physical Controls. These take the form of barriers and guards or signs to warn individuals, units, or organizations that a hazard exists. Special controller or oversight personnel also fall into this category.
- Avoidance/Elimination Controls. These controls include positive action to prevent contact with an identified hazard or the total elimination of the hazard.

1-29. To be effective, each control developed must meet the following criteria:

- Suitability. It must remove the hazard or mitigate (reduce) the residual risk to an acceptable level.
- Feasibility. The unit must have the capability to implement the control.
- Acceptability. The benefit gained by implementing the control must justify the cost in resources and time. The assessment of acceptability is largely subjective.

Find Control Measures

1-30. Sources such as personal experience, AARs, accident data from automated risk management systems available through the United States Army Combat Readiness Center (USACRC), SOPs, regulations, tactics, techniques, and procedures (TTPs), and lessons learned from similar past operations can provide or identify possible control measures for specific events, operations, or missions. CRM worksheets from previously executed missions provide another source for selecting controls. The key to effective control measures is that they reduce the effect of or eliminate the identified hazard.

Examples of Control Measures

1-31. Effective control measures must specify who, what, where, when, and how.

- Unsecured/unstable loads.
  - WHO: Supervisors, leaders, drivers, operators.
  - WHAT: Ensure loads are secured in accordance with load plans and applicable manuals.
  - WHERE: In the assembly area.
  - WHEN: Before vehicle is allowed to leave.
  - HOW: Emphasize cargo center of gravity, ammo, and pyrotechnics.
- Unsecured hatches/ramps.
  - WHO: Supervisors, leaders, drivers, operators.
  - WHAT: Inspect and repair unsafe conditions.
  - WHERE: In the assembly area or motor park.
  - WHEN: Before operation.
  - HOW: Secure with locking pin or latch devices.

- Spot check vehicles, crew, passengers exposed during operation on rough terrain (tracked vehicles).
    - WHO: Supervisors, leaders, drivers, operators.
    - WHAT: Position no higher than "nametag defilade" unless engaging targets, wear seatbelts when seated, equipment stowed and secured in accordance with load plans.
    - WHERE: In the assembly area or motor park.
    - WHEN: Before operation and during operations.
    - HOW: Spot check vehicles.
- Improper passing.
    - WHO: Supervisors, leaders, drivers, operators.
    - WHAT: Establish and enforce standards, train vehicle operations to pass other vehicles only at safe places and times while considering road visibility and traffic conditions.
    - WHERE: In assembly areas and motor parks.
    - WHEN: Train operators and drivers before licensing, brief operators and drivers before vehicle operation.
    - HOW: Verify drivers and operators are trained and licensed, enforce standards.
- Improper ground guiding.
    - WHO: Supervisors, leaders, drivers, operators, Soldiers
    - WHAT: Establish and enforce standards for operation of vehicles in congested areas (bivouac, maintenance, assembly and battle positions).
    - WHERE: Assembly areas, motor parks.
    - WHEN: Before licensing drivers and operators, before exercises.
    - HOW: Require use of ground guides while operating in limited visibility, backing vehicles, movement of vehicles in bivouac, maintenance, assembly and battle positions.

Reassess Risk

1-32. With controls applied, risk must be reassessed to determine the residual risk associated with each hazard and the overall residual risk for the mission. The process of developing and applying controls and reassessing risk continues until an acceptable level of risk is achieved or until all risks are reduced to a level where benefits outweigh potential cost.

1-33. Residual risk is the risk remaining after controls have been selected for the specific hazard. Residual risk is valid (true) only if the identified controls are implemented. As controls for hazards are identified and selected, the hazards are reassessed as in step 2 and the level of risk is then revised. It is possible that application of available controls may not be sufficient to warrant lowering the risk level of a given hazard.

1-34. Overall residual risk must be determined by considering the residual risks for all of the identified hazards. The residual risk for each hazard may be different, depending on the assessed probability and severity of the hazardous incident. Overall residual risk is determined based on the greatest residual risk of all the identified hazards. The overall residual risk of the mission will be equal to or higher than the highest identified residual risk. Consideration must also be given to the number and type of hazards present. In some cases the commander may determine that the overall residual risk is higher than any one hazard. This is based on a number of lower risk hazards if, in combination, they present a greater hazard. For example, a mission risk assessment may result in moderate residual risk for all identified hazards. Based on the complexity of required controls and the potential synergistic effect of all hazards the commander may determine that the residual risk for the mission is high.

Make Risk Decisions

1-35. The purpose of the CRM process is to provide a basis for making sound individual and leadership risk decisions. A key element of the risk decision is determination of what constitutes an acceptable level of risk. Risk or potential loss must be balanced against expectations or expected gains. Risk decisions must always be made at the appropriate level of command or leadership based on the level of risk involved.

STEP 4 – IMPLEMENT CONTROLS

1-36. Leaders and staffs ensure that controls are integrated into SOPs, written and verbal orders, mission briefings, and staff estimates. The critical check for this step is to ensure that controls are converted into clear and simple execution orders. Implementing controls includes coordination and communication with the following:

- Appropriate superior, adjacent, and subordinate units, organizations, and individuals.
- Logistics Civil Augmentation Program (LOGCAP) organizations and civilian agencies that are part of the force or may be impacted by the activity, hazard, or its control.
- The media and nongovernmental organizations (NGO) when their presence impacts or is impacted by the force.

1-37. Leaders must explain how the controls will be implemented. Examples include the following:

- Overlays and graphics.
- Drills for vehicle and aircraft silhouette identification.
- Rehearsals and battle drills.
- Refresher training on intensive threat and friendly vehicle identification for all anti-armor and air defense weapons crews.
- Orientation for replacement personnel.
- Installation and maintenance of communications links for key civilian organizations.
- Operating convoys with a prescribed minimum number of vehicles.

- Provisions to carry weapons and wear body armor and helmets when outside secure compounds.
- Accident awareness, safety briefings, and warnings.

STEP 5 - SUPERVISE AND EVALUATE

1-38. Step 5 of the CRM process is the means to ensure that risk controls are implemented and enforced to standard. It also provides the means of validating the adequacy of selected control measures in supporting the objectives and desired outcomes. Like other steps of the CRM process, supervision and evaluation must occur throughout all phases of any operation or activity. This continuous process provides the ability to identify weaknesses and to make changes or adjustments to controls based on performance, changing situations, conditions, or events.

Supervise

1-39. Supervision is a form of control measure. In step 5 of CRM, supervision becomes an integral part of the process. Supervision ensures subordinates understand how, when, and where controls are implemented. It also ensures that controls are implemented, monitored, and remain in place. Situational awareness is a critical component of the CRM process when identifying hazards. Situational awareness is equally important in supervision. It ensures that complacency, deviation from standards, or violations of policies and risk controls are not allowed to threaten success. Factors such as fatigue, equipment serviceability/availability, and the weather and environment must be monitored. The hazards they present can then be mitigated. Supervision and oversight provides commanders and leaders with the situational awareness necessary to anticipate, identify, and assess any new hazards and to develop or modify controls as necessary.

1-40. An extraordinary degree of discipline is required to avoid complacency from boredom and overconfidence when personnel are performing repetitive tasks. Controls established and implemented for a prolonged period are especially “at risk” to be ignored due to overconfidence or complacency. During stability operations, for example, at the beginning of an operation, the hazards poised by land mines may be readily identified and controls established and enforced. However, over time and with success (no accidents or incidents) complacency may set in. When this happens, established controls lose their effectiveness. The terrorist threat and personal security are examples. When personnel live or operate in an area that is not considered a high threat area, or, in cases where personnel have operated in a high threat area for an extended period without incident, there is the risk of losing situational awareness and failing to remain vigilant. Other examples of long-term hazards include climatic extremes, NBC and hazardous waste contamination, or diseases native to a particular area of operation or indigenous population.

Evaluate

1-41. The evaluation process occurs during all phases of the operation, and as part of the AAR and assessment following completion of the operation or activity. The evaluation process serves to accomplish the following:

- Identify any hazards that were not identified as part of the initial assessment, or identify new hazards that evolved during the operation or activity. For example, any time that personnel, equipment, environment, or mission change the initial risk management analysis, the control measures should be reevaluated.
- Assess effectiveness in supporting operational goals and objectives. Did the controls positively or negatively impact training or mission accomplishment? Did the controls support existing doctrine, techniques, tactics and procedures?
- Assess the implementation, execution, and communication of the controls.
- Assess accuracy of residual risk and effectiveness of controls in eliminating hazards and controlling risks.
- Ensure compliance with the guiding principles of CRM. Was the process integrated throughout all phases of the operation? Were risk decisions accurate? Were they made at the appropriate level? Were there any unnecessary risks, and did the benefit outweigh the cost in terms of dollars, training benefit, and time? Was the process cyclic and continuous throughout the operation?

Tools and Techniques

1-42. Commanders, leaders, and individuals have responsibilities for supervision and evaluation of operations and activities. Techniques may include spot-checks, inspections, situation reports (SITREPs), back briefs, buddy checks, and close oversight.

1-43. AARs provide a forum in which the entire mission or operation may be assessed. Effectiveness of the CRM process and an assessment of the criteria should be included as a part of any AAR.

1-44. Based on evaluation and assessment of the operation and the effectiveness of CRM, lessons learned should be developed and disseminated to others for incorporation into future plans, operations, and activities. The S3 ensures that lessons learned from the CRM process, to include CRM worksheets, are captured and retained for use during future operations.

TRACKING AND DOCUMENTATION

1-45. To maintain continuity with mission tasks and requirements, it is necessary to track the CRM process in a standardized manner. Many tools are available that can be tailored to portray CRM information to suit a particular mission, situation, operation, or event. When time and situation allow, the Army standard CRM worksheet (DA Form 7566, Composite Risk Management Worksheet) or an electronic version will be used to document the CRM process. See Appendix A for a sample of this form and instructions on its use. Appendix B contains sample scenarios and examples of the CRM worksheet. In addition to providing an Army standard, continuous use of this worksheet reinforces CRM application and trains leaders, Soldiers, and individuals to think in terms of a five-step CRM process. Locally generated substitute forms, approved by individual commands, must contain as a minimum, all information included on the DA Form 7566.

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Chapter 2

Responsibilities

Chapter 1 discussed the CRM process and its universal application in Army decisionmaking. To be effective, this process must be understood and applied at every level. Commanders, staff officers, leaders, and individual Soldiers each contribute to the on-going process. Individual responsibility in CRM depends largely on the operation or activity for which it is being used. In operational missions, decisionmaking is a primary responsibility and the prerogative of commanders, leaders, and staffs. Individual Soldiers operate within the risk parameters established and provide feed-back. In nontactical or even off-duty activities, CRM becomes an individual responsibility.

COMMANDER

2-1. The commander's responsibilities for CRM are as follows:

- Ensure ability of warfighting functions (WFF) functions to perform to standard to minimize human error, materiel failure and environmental effects.
- Establish a force protection policy and publish a commander's safety philosophy with realistic safety goals, objectives, and priorities.
- Ensure the commander's training assessment considers ability of WFF to protect the force. Select and ensure implementation of long-term, short-term, and near-term control actions to improve force protection.
- Ensure staff integrates risk management into the planning and execution of training and operational missions.
- Make risk decisions. Select, monitor, and enforce implementation of controls for hazards most likely to result in loss of combat power. After implementing controls, if risk remains above the tolerance level established by higher command then he or she must elevate the risk decision to the appropriate command level.
- Ensure that the CRM process is evaluated during all AARs.
- Determine if unit performance meets force protection guidance. Determine effectiveness of hazard controls and necessary changes to guidance and controls. Ensure these changes are fed back into the training management cycle and guidance for operational missions, including unit SOPs.

S3

2-2. Because CRM is an integral part of mission and operational planning, the S3 staff and officer are responsible for CRM integration. In organizations with organic professional safety personnel, the safety officer/manager, as part of the commander's special staff, provides technical CRM expertise to the Commander and staff. Organizations without organic safety personnel obtain this assistance from trained additional duty safety officers. The S3's duties to integrate CRM include—

- Monitor the ability of each WFF to protect the force. Advise commander when below-standard status (affecting force protection) of any WFF is detected.
- Develop input for commander's force protection policy and goals with objectives and priorities.
- Develop force protection input for quarterly training guidance and SOP.
- Develop, with safety officer/manager assistance, safety input options for commander's training assessment.
- Complete risk assessment for each COA during operational missions.
- Assess unit risk management and force protection performance during training and operations. Provide recommended changes to force protection guidance and controls.
- Ensure that lessons learned from the CRM process and worksheets are captured and retained for use during future operations.

STAFF (ALL)

2-3. Each staff element is responsible for integrating CRM into their staff estimates and plans. The staff responsibilities for application of CRM include the following:

- Execute functions to provide—
  - Necessary support to meet operational requirements.
  - Clear and practical procedures and standards for each task of the mission essential task list (METL).
  - Necessary training for task performance to standard.
- Identify force protection shortcomings in WFF and develop control actions.
- Apply risk management procedures.
- Develop and implement controls selected by the commander.

LEADER

2-4. Leader responsibilities for the application of CRM include the following:

- Enforce METL task performance to standard. Adopt the "crawl-walk-run" approach in planning and executing training.
- Make use of automated on and off duty CRM tools and surveys available from the USACRC.
- Execute risk reduction controls selected by the commander by developing and implementing supporting leader-level controls. Apply risk management procedures to each

task of the METL. After implementing controls, if the risk is still above the leader's authority to accept, elevate the risk decision to the appropriate command level.

INDIVIDUAL

2-5. The Soldier's role in CRM in the operational environment is to support commanders and leaders in the rapid identification and communication of hazards and associated risks that arise and may impact on the mission. This usually takes the form of providing immediate feedback to the leader as the mission progresses and hazards are encountered. During the execution of the mission, the Soldier becomes a primary source for actively identifying, reporting, and assessing those hazards. Short written messages, hand and arm signals, or radio transmissions are effective means of communicating first-hand information to leaders. There will be situations, however, when individual Soldiers or small groups must act alone or make risk decisions within the context of orders. All Soldiers must understand how to use the CRM process to enhance mission success and to reduce or eliminate loss.

2-6. All Soldiers must be aware of all risk regardless of source and address these risks simultaneously. Soldiers may not prepare risk assessment worksheets or use any special matrix during the process in all situations. They rely on risk guidance from the squad leader to determine potential changes in the risk level. Reporting is the key to CRM at the Soldier level. Soldiers—

- Sustain self-disciplined duty performance and conduct.
- Execute risk management controls selected by the commander and leader.
- Use risk assessment tools provided by the USACRC and their leaders. Identify control actions for risk factors revealed by these tools. Execute those controls that are within personal capability. Request chain-of-command assistance with controls that are above personal authority or capability.
- Use risk management procedures in executing METL tasks.

2-7. In operational environments, Soldiers rely on risk parameters established by commanders and leaders. However, in nontactical and off-duty situations, Soldiers must make their own risk decisions. All Soldiers must understand the entire CRM process as a life skill that is applicable to all activities. The principles of CRM are as relevant in this environment as they are in MDMP or troop-leading procedures (TLP). Application of the CRM process provides the individual a decisionmaking tool to effectively identify and control hazards in their personal day-to-day activities.

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Chapter 3

Application to TLP

TLP are sequences of activities used by small unit leaders to plan and prepare for operations. CRM is an integral part of this process. TLP provide small unit leaders a framework for planning and preparation. This chapter will address risk management application by leaders of company and smaller size units. It will help them identify hazards, assess risk, and make sound risk decisions based on the process and principles of CRM. In Chapter 2 the focus of CRM integration was on the individual. This chapter will focus on application of CRM at the grass-root level of leadership when planning time is at a premium.

FM 5-0 describes TLP as a dynamic process used by small unit leaders to analyze a mission, develop a plan, and prepare for an operation. The key difference between the MDMP and TLP is the available time and staff resources to perform the process. The MDMP is normally applied at command levels where there is sufficient staff and time available to perform a detailed and thorough review and assessment. In the MDMP process, formal COAs are developed and written orders are published. TLP execute the plans and orders developed through the MDMP. TLP are normally performed by leaders or commanders with minimal staff support and with limited time. Figure 3-1 presents a graphic depiction of where the CRM steps fit into and support TLP.

PARALLEL PLANNING

3-1. The amount of time available to a commander or leader often dictates the level of detail they can achieve in plans. To maximize the time available, commanders often pass information in the form of warning orders (WARNOs) to their subordinates. This allows their subordinates to begin a parallel planning process. Figure 3-2 depicts this parallel planning process. It also shows the relationship of the MDMP to TLP. The type, amount, and timeliness of risk management information that is passed from higher to lower levels of command may have a significant impact on the level of detail used by lower unit leaders.

3-2. The time between receiving the mission and initiating the WARNO order can significantly impact the time available for a subordinate unit to conduct risk assessments. It

also impacts their ability to implement control measures. While battalion and higher level HQ have specialized staff sections conducting risk assessments, the same assessments at company and platoon level may be performed by only one or two leaders. Higher level commanders should provide subordinates sufficient time to conduct each of the five steps of the CRM process. Particular attention should be given to Step 4 (Implement Controls).

Figure 3-1. TLP and risk management steps

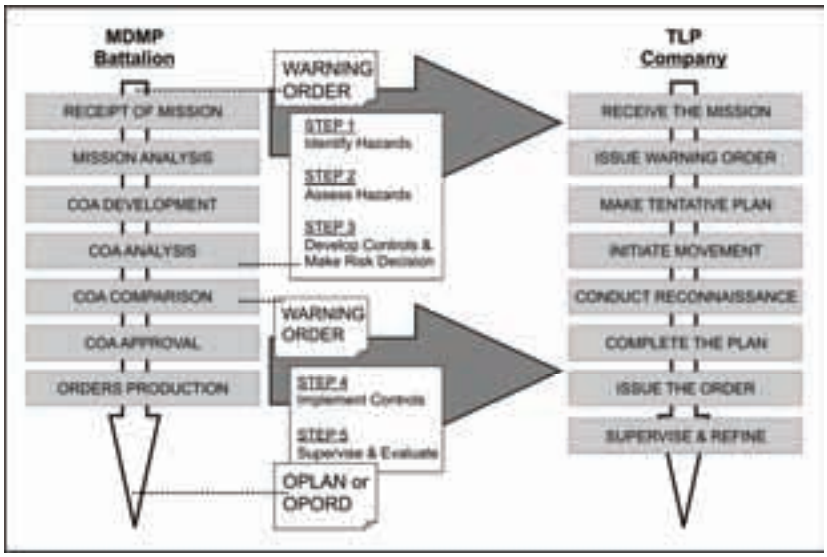

Figure 3-2. MDMP and TLP

WARNO

3-3. The WARNO provides subordinate commanders and leaders the additional time to conduct assessments, perform parallel planning, and begin preparations in anticipation of a coming mission. Under normal conditions, a battalion HQ will issue at least three WARNOs to their subordinate units. The first is issued on receipt of the mission, the second on completion of the mission analysis, and the third when a specific COA has been approved. Subordinate commanders and leaders can expect to receive sufficient information in the WARNO to begin their preparation and assessments. Figure 3-3 depicts some of the risk management considerations in each of this series of WARNOs.

First WARNO

3-4. This is a “heads-up” notice only. Commanders and leaders can expect broad, general information with minimal risk management guidance. This WARNO may take the form of an overlay. It may also consist of graphic control measures depicting controls established by the higher HQ. Leaders should be alert to any control measures that will require coordination with adjacent units. The subordinate commander or leader must review this guidance carefully to determine if there are specific actions or implied tasks required to implement these controls. Risk guidance will be depicted in paragraph 3c, Coordinating Instructions.

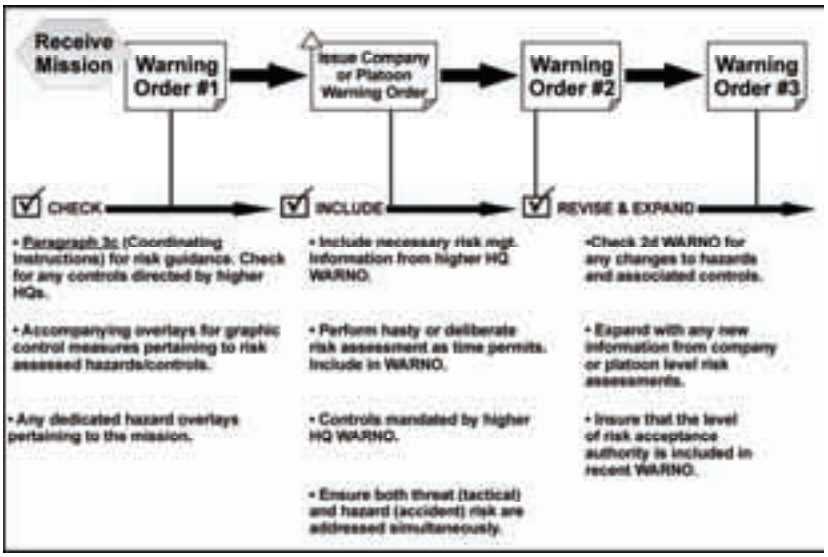

Figure 3-3. Information flow

Second WARNO

3-5. On completion of the mission analysis, commanders will issue the second WARNO. Risk guidance will be more detailed in this WARNO. It may contain the results of the critical risk assessments prepared during the mission analysis. Risk information in this order may consist of both graphic control measures and mission tasks. These should address specific hazards and controls for the entire operation. Lower level commanders and leaders must initiate immediate action to integrate this guidance into their planning. At this time, the leader should begin to conduct a detailed risk assessment. He or she should also initiate any physical controls directed by the higher HQ.

Third WARNO

3-6. The risk guidance contained in the third WARNO will normally be identical to that of the second. Commanders and leaders should cross-reference this information with the earlier WARNOs to identify changes or additional requirements. If not addressed previously, this WARNO should address the level of risk that they can assume for the operation.

PROCESS

3-7. The CRM process is on-going. It continues from the receipt of the initial WARNO to the receipt of the final OPORD. Information and assessments are continually revised and updated to reflect the current situation. The process of receiving, distributing, revising,

and updating the hazards and controls for both threat (tactical) and hazard (accident) risk continue simultaneously until the final order is issued. The key is to provide subordinates with the most current and complete information pertaining to hazards and controls for the existing situation. Commander and leaders at all levels must ensure that each successive WARNO contains sufficient CRM information to assist subordinate commanders and leaders with their planning and preparation for the coming mission or operation. To be effective, commanders and leaders must remain especially alert for those controls that require coordination with adjacent units.

CRM TECHNIQUES AND TLP

3-8. The following paragraphs detail some of the procedures and techniques for applying the CRM process to the eight steps of TLP.

RECEIVE THE MISSION

3-9. Commanders and leaders normally receive a mission in several ways. These depend on the available time, mission changes, and METT-TC factors. As discussed earlier, the WARNO is a common vehicle used when time is not a premium. When the situation does not allow sufficient time for execution of the normal TLP, a FRAGO may be used.

Adequate Planning Time Exists

3-10. Risk assessments made when adequate time exists may be deliberate and detailed using the CRM worksheet. This form will usually accompany the completed operation order. It may be referenced in the various staff annexes. Commanders and leaders may use the form to capture both higher HQ CRM information and their own CRM data. Units, commanders, or leaders will not develop local adaptations of this form. The specific delineation of the hazard, the risk, the controls, and the supervisory aspects as required by DA Form 7566 (Composite Risk Management Worksheet) will be followed. The CRM worksheet must be a stand-alone document that identifies, explains, and clearly defines the CRM aspects of the associated OPORD, WARNO, or FRAGO.

Inadequate Planning Time Exists (Shortage of Time)

3-11. Battlefield dynamics within the operational environment often produce situations where immediate decisions are required. Commanders and leaders are often faced with situations that require immediate decisions. They often have little or no time to make a deliberate application of the CRM process. In these situations, they perform hasty risk assessments. A hasty risk assessment may be performed mentally. It may be transmitted verbally or in writing via a FRAGO. Figure 3-4 shows an example of a hasty risk assessment passed from company to platoon level. Only the essential information necessary to complement the FRAGO and forward the risk guidance received from the battalion commander are included. As in the example, an overlay may be included with the risk assessment to clearly portray the location of hazards. In this example, the hasty risk assessment is a separate document. However, it may be included within the FRAGO issued by the company to the platoon.

PERFORM THE INITIAL ASSESSMENT

3-12. During this step, the commander or leader makes an initial risk assessment that compares the potential for threat (tactical) and hazard (accident) risk against the factors of METT-TC. He or she looks for potential hazards that may arise during the initial movement, execution, and consolidation phases for the mission. CRM information and guidance from the higher HQ must be included in this assessment.

ALLOCATE THE AVAILABLE TIME

3-13. During this step, commanders and leaders must estimate the available time to plan, prepare, and execute the mission. A reverse planning process is used to identify and allocate adequate time for all of the major events of the operation. As a rule of thumb, the company commander uses the one-third/two-thirds rule. They use one third of the available time and leave two thirds of the time for subordinates. It is especially important that time estimates be realistic and as accurate as possible.

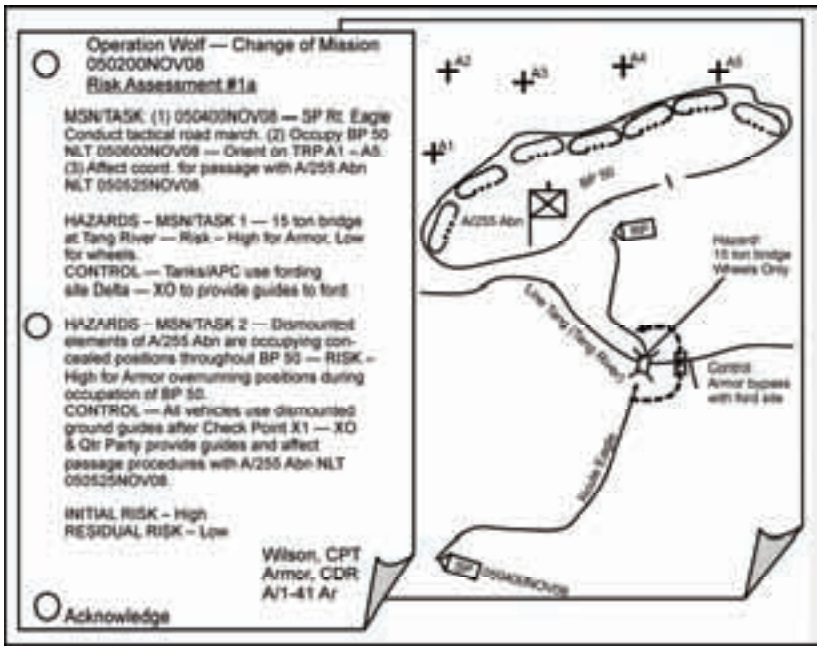

Figure 3-4. Sample hasty risk assessment

ISSUE A WARNO

3-14. Previously, the WARNO sequence and risk management information found in the order was addressed in terms of its applicability to the MDMP. Frequently, WARNOs are given verbally with only a few notes and/or graphic overlays. Figure 3-5 provides an

example of a platoon WARNO with CRM information included. The CRM information in this example is general and should be expanded as subsequent guidance is received from higher headquarter or as the situation changes. In this example the commander included an initial assessment of the potential for fratricide. This may be changed or expanded on receipt of the final order.

Gentlemen, this is a warning order for our next operation. Hold your questions until I have finished.

SITUATION: Our battalion has been ordered to conduct Search and Attack out of Fire Base Alpha into Areas Scorpion, Spider and Hornet. The operation will begin at 050530Mar08. Our company will conduct Search and Attack into Area Spider to destroy insurgent forces in sector. We can expect to encounter small squad size elements scattered around the area at various hide and weapons cache sites.

MISSION: 050530Mar08 1st Platoon conduct Search and Attack along axis Hawk to clear Route 451 of insurgent ambush sites and weapons caches.

EXECUTION: We will be one of three platoons moving on axis Hawk and Dove followed by another platoon in reserve.

TIME SCHEDULE:
* Orders at 050200Mar08
* LD time is 050500Mar08
* Final equipment inspection is at 050300Mar08
* Platoon rehearsal with squad leaders at 050330Mar08

Threat Risk-High. Although outnumbered, enemy is equipped with automatic weapons and RPGs, and defending from prepared positions. Very limited cover and concealment along axis Hawk.

Hazard Risk-Low. No adverse weather forecast. Terrain is rolling with no major obstacles.

Fratricide-Low. Open aspects of the terrain make identification of friendly forces easy.

Figure 3-5. Platoon WARNO

MAKE A TENTATIVE PLAN

3-15. In the MDMP, this step consists of five substeps that address the following:

- Mission analysis.
- COA development.
- COA analysis.

- COA comparison.
- COA approval.

The CRM process consists of several risk assessments that balance the potential risk against the potential gains and the assigned limitations of acceptable risk. Within TLP, CRM is a rapid, informal process conducted mentally by the responsible leaders. The succeeding paragraphs will address only those aspects of mission analysis as they are performed by commanders and leaders in TLP.

Mission Analysis

3-16. From a CRM perspective, commanders and leaders routinely examine higher HQ missions or orders to determine the associated level risk. For example, units conducting movement to contact through open rolling terrain with little cover and concealment might have a greater risk than a unit conducting a defense in sector. Commanders must consider whether the higher HQ has identified all possible hazards and applied appropriate controls. They must consider if they will be required to conduct their own assessments and apply controls related to the following:

- Maneuver scheme. Is the maneuver scheme difficult to understand? Is it too complex for communications through the command and control channels? Is there a potential for misunderstanding?
- OPORD vs. FRAGO. FRAGOs are normally associated with hasty risk assessments and may not have the depth of detail found in an OPORD. The impact of the level of detail must be considered in the determination of the final risk for the mission.
- Unit experience and SOPs. Past unit experience and unit training for the type operation/mission assigned are significant factors in determination of risk level. Does the unit have an SOP that deals with this type of operation or is this a new experience? Existence of SOPs, past experience, or training are key factors in reducing the level of risk in a given situation.
- Constraints, requirements, and controls. The order from higher HQ should outline the specific requirements, limitations, or expectations placed on the unit. Missions of adjacent units, preplanned support, or logistical support requirements are aspects that will affect the level of risk for a given situation. The commander must determine if the mission is a control measure for another element in the plan or operation. In this case, he or she must determine if there are any specified or implied tasks that may have been inadvertently assigned below brigade level.
- Mission statement. Based on the mission analysis, the commander writes a restated mission. From the risk management perspective, clarity and accuracy are keys to the who, what, when, where, and why aspects of the mission.

The Enemy

3-17. The commander assesses the enemy capability to defeat, delay, or cause significant loss. Common factors that must be considered include the following:

- The enemy’s offensive and defensive capability.

- The advantages and disadvantages given the enemy by occupation of certain key terrain.
- The ability of the enemy to obtain battlefield intelligence and reconnaissance capability.
- Adequate flow of intelligence information to negate any advantages the enemy may have. Detailed intelligence preparation of the battlefield is one of the best controls to overcome the threat hazards presented by the enemy.

Risk Assessments, Weather, and Terrain

3-18. An in-depth risk assessment associated with the mission analysis must consider the military factors of OAKOC. These factors may serve as controls to eliminate hazards or may create hazards themselves under certain weather conditions. This is particularly important at company and platoon level where units are directly exposed to both threat and hazard risks. Figure 3-6 provides an example of how current METT-TC CRM information is included in paragraph 1 (Situation) of the FRAGO. Figure 3-6 depicts the elements of a CRM assessment at company or platoon level.

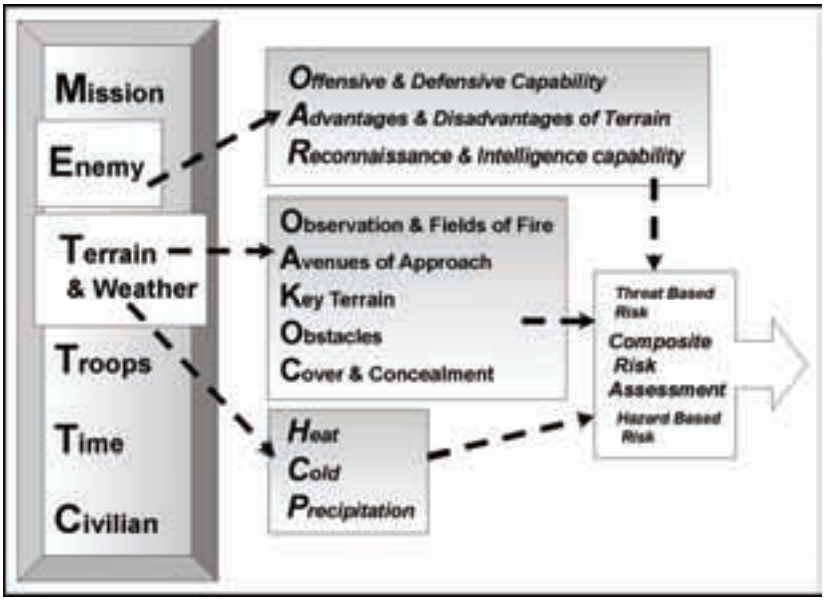

Figure 3-6. Risk assessment factors

3-19. Regardless of the risk encountered, commanders and leaders must ask the following questions before making their risk assessments:

- How long has my unit operated in the environment and climate?
- Have my Soldiers had experience operating in this type of terrain?

Weather

3-20. Regardless of how carefully planned, how effective the maneuver scheme, or how experienced the unit, weather can create hazards that can totally disrupt an operation. Weather can give advantage to the enemy. Conversely it can be used to tactical advantage by friendly forces. Commanders and leaders must simultaneously address the threat and hazard risks ensuring that they consider the following:

- Potential adverse effects of heat and cold on the performance of Soldiers.
- Effects of climate and weather on maintenance of vehicles and equipment before and during an operation.
- Changes in weather and the potential for hazardous conditions developing that may impact the five military aspects of terrain.

Terrain

3-21. Commanders and leaders should consider the five main military aspects of terrain as part of the composite risk assessment. Commanders should make no differentiation between threat-based risks or hazard- based risks impact upon the unit or mission. Any potential loss, whether threat or hazard-based, must be considered. The potential loss must be prioritized based on ultimate impact, not on the source of the hazard/risk. (Considerations for the military aspects of terrain were discussed in Chapter 1.)

INITIATE MOVEMENT

3-22. It is important that commanders and leaders consider the hazards and risk associated with the initial movement phase of any operation. The CRM process is continual. Leaders at all levels continue the process by assessing risk from the perspective of their involvement in the mission. Risk assessments performed at this step by subordinate leaders are in addition to that associated with the primary mission and are equally important to overall mission success. For example, the company commander may address threat and hazard risk that could disrupt the unit's movement to an attack position over some very steep terrain. The platoon leader may focus on the experience level of the drivers in negotiating narrow roads with steep drop-offs during the course of the movement. For this example, some common controls that the company commander may use to control traditional hazards are—

- Employment and use of reconnaissance assets from battalion level.
- Use of quartering parties with guides from those platoons involved in the operation.

CONDUCT RECONNAISSANCE

3-23. Time permitting, nothing can replace a detailed map and ground reconnaissance by commanders and leaders. Physical reconnaissance allows leaders to 'see' the nature of specific METT-TC hazards. It also provides invaluable information for the planning stage of an operation. It provides a solid foundation for future assessments as the operation progresses. Whether providing information concerning enemy movements or a critical part

of the route that has been washed away, an on-going reconnaissance provides the depth of knowledge needed to make CRM decisions.

COMPLETE THE PLAN

3-24. The primary concern of both commanders and leaders at this point is to ensure that the CRM process has been fully integrated into the planning and preparation process. The following CRM checks should be made prior to issuing the final order:

- Risk guidance and assessments from higher HQ have been incorporated. This includes information on operations overlays and risk assessments included in staff annexes.
- Risk and control information have been considered in the final plan.
- Awareness, educational, and physical controls for specific hazards have been briefed throughout the chain of command. All involved parties have a thorough understanding of their role in avoiding specific hazards.
- All applicable hazard overlays and risk assessment worksheets have been prepared for use. They should be in the hands of the individuals charged with the responsibility for their implementation.
- CRM tasks and controls that involve coordination with adjacent units have been confirmed.
- Reconnaissance personnel, guides, and quartering party personnel have a complete understanding of the specific hazards and controls that impact on their mission.

ISSUE THE ORDER

3-25. Most company and platoon orders are issued verbally and are supplemented by detailed graphic overlays. The standard five-paragraph format associated with a written order is used. CRM information is normally included in paragraph 3c (Coordinating Instructions). Under the concept of CRM, both threat (enemy) and hazard (all other METT-TC) risks are addressed collectively. In some circumstances the threat risk hazards may be addressed in paragraph 1a leaving the hazard risk in paragraph 3d. Figure 3-7 provides an example of a verbal order using this approach. Figures 3-8 and 3-9 show the use of graphic overlays and terrain sketches to identify hazards and controls.

Verbal Order (Example) – Note the composite risk assessment information underlined.

"Gentlemen, attention to orders.

There is no change to our existing task organization.
SITUATION:
Enemy Forces: Our battalion scouts have confirmed insurgent platoon size unit occupying the village of Uriel. They have been observed preparing fighting positions in the main government building, mosque, and the rail station. Threat risk is high due to the enemy being equipped with both 7.62, 12.7 automatic weapons and RPG. Numerous ammunition cache points are thought to be within each of the strongholds. Control for this will be the employment of both close air and artillery support.

Friendly Forces: 1-25 Infantry attacks 072130Mar08 with three companies in sector to secure objectives Wolf (government building), Fox (mosque), and Badger (railroad station). A/1-25 Inf will attack on Axis Spider to secure Obj Wolf. B/1-25 Inf will attack on Axis Hornet to secure Obj. Fox, and C/1-25 Inf will attack on Axis Scorpion to secure Obj Badger.

Mission: Company C, our unit, will attack in the center on Axis Scorpion, to secure Objective Badger, the railroad station at 072130Mar08. We are to destroy enemy forces occupying the objective and secure any ammunition and weapons cache sites.

Execution:

Our company will attack with two platoons abreast to secure the passenger terminal buildings, and locomotive storage facility outside the Uriel to Stamborn rail line.

"Maneuver!

1st platoon! You will attack in sector, East of Line Rope to seize and secure the locomotive storage facility at X1.

2nd platoon! You will attack in sector West of Line Rope to seize and secure the passenger terminal building at X2.

3rd platoon! You will follow in reserve West of Line Rope. Be prepared to assume the mission or provide supporting fire to either lead platoon.

Fires!
Priority 60mm mortar fire to 1st Platoon initially. There will be a 3 min artillery prep on X1 and X2 crossing of the LD.

Company Trains! Will remain in current location until completion of mission then displace on order to vicinity X2 for further instructions.

Risk Guidance:
Hazard #1 – The South bank of the drainage ditch (LCX C) has a 10 foot vertical drop on the South side. Soldiers could become injured on entry.
Control #1 – Instruct all squads to use the buddy system to lower soldiers into ditch. Squad leaders conduct rehearsal of this activity prior to LDX C time.

Hazard #2 – Platoons coming under friendly artillery fire during 3 min prep.
Control #2 – Platoons do not cross PL Bos until artillery prep is complete.

Figure 3-7. Sample verbal order

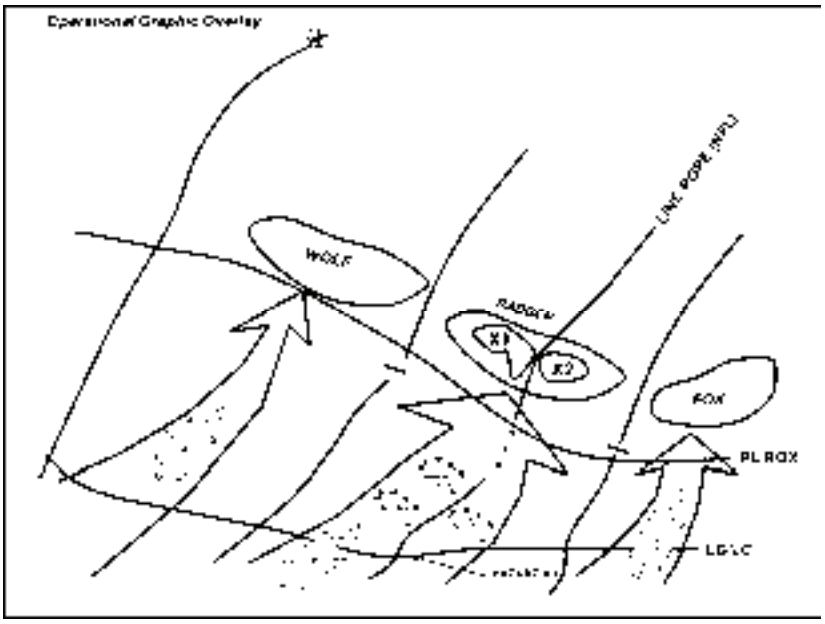

Figure 3-8. Sample graphic overlay

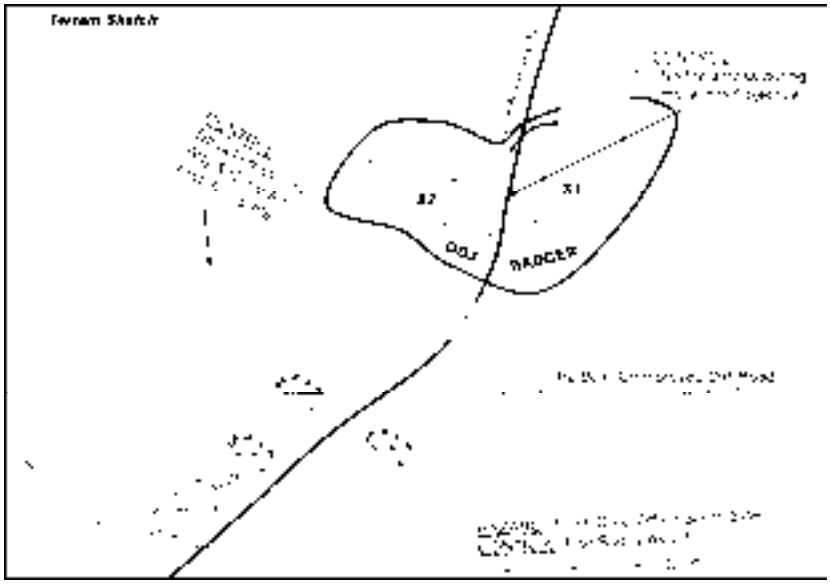

Figure 3-9. Sample terrain sketch

SUPERVISE AND ASSESS

3-26. This TLP step might be considered as a control within itself. When leaders monitor mission preparations, they are able to identify and control many potential hazards that could occur during the actual execution of the mission. CRM is a continuous process related to the inspection of personnel and equipment, coordination with adjacent units, the exchange of information, and the conduct of rehearsals

3-27. There are six types of rehearsals that company and platoon leaders may use to enhance unit effectiveness and provide educational controls:

- Confirmation Brief. This normally occurs shortly after the subordinate leaders receive their orders. A company commander ensures the leaders understand their roles and responsibilities by having them back brief—
  - Their understanding of the mission.
  - Specific assigned tasks.
  - Particular risk assessment aspects such as hazards and controls related to their mission.
- Back Brief. After leaders have had time to make their plans and affect their preparations, the back brief provides the commander the detailed execution plan to include risk assessments as they relate to the operation.
- Reduced-Force Rehearsal. Normally accomplished on terrain similar to that where the operation is to be conducted. The reduced force rehearsal allows subordinate leaders to

walk through their mission tasks and reinforces their memory from the back brief. The company commander should ensure that all hazards and control actions are included in the rehearsal. If time permits he or she may elect to review possible actions for potential unforeseen hazards that could develop.

- Full-Dress Rehearsal. The complete unit participates. It is conducted on ground similar to that of the actual mission. Normally this rehearsal will be conducted first during daylight, then under limited visibility conditions. This will ensure that all potential hazards and controls have been addressed.
- Support Rehearsals. These involve the logistical tasks and units required to support the overall operation. From the risk management perspective these may involve reacting to worst case scenario that may require additional medical or Class V support related to mission changes.
- Battle Drills and SOP Rehearsals. These rehearsals reinforce the techniques that are part of a specific set of procedures that address or are identified as controls in the CRM process. Examples of these rehearsals include clearing a building or reacting to an ambush.

DYNAMIC ASPECTS OF CRM

3-28. The evolving battlefield environment presents commanders and leaders with situations where there is no time to complete formal written risk assessments. In these cases, the CRM process must be completed mentally and transmitted verbally to subordinates.

THE INDIVIDUAL SOLDIER'S ROLE

3-29. The Soldier's role in CRM process is to support commanders and leaders in the rapid identification and communication of hazards and associated risks that arise and may impact on the mission. This usually takes the form of providing immediate feedback to the leader as the mission progresses and hazards are encountered. During the execution of the mission, the Soldier becomes a primary source for actively identifying, reporting, and assessing those hazards. Short written messages, hand and arm signals, or radio transmissions are effective means of communicating first-hand information to leaders. There will be situations, however, when individual Soldiers or small groups must act alone or make risk decisions within the context of orders; all Soldiers must understand how to use the CRM process to enhance mission success and to reduce or eliminate loss. In these situations, the Soldier usually does not prepare risk assessment worksheets or use any special matrix during the process. Rather, he or she relies on risk guidance from the leader to determine potential changes in the risk level. At the Soldier level, the key to the CRM process is reporting.

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Chapter 4

Application to the MDMP

This chapter details how CRM is integrated into the MDMP. Application of each of the five steps of the CRM process into MDMP should be seamless. CRM is not a stand-alone process. Effective CRM entails full integration into the MDMP. The seven steps of the MDMP are explained in detail in FM 5-0. It may be necessary to refer to this manual to fully comprehend the application. This chapter parallels the information set forth in FM 5-0.

To understand risk management application to the MDMP, we must first examine where the process fits within the Army's command and control (C2) system. Once that is presented, we will then focus on those actions that leaders and staff perform to prepare for combat operations using MDMP as the primary tool.

RELATIONSHIP TO C2

4-1. The CRM process is an integral tool of C2. It provides commanders a systematic process to identify hazards and react to situational changes while managing chaos and uncertainty. The five steps of the CRM process sequentially support each phase of the C2; steps 1 and 2 fall into the Plan phase, step 3 aligns with the Prepare phase and steps 4 and 5 are associated with the Execution phase. (See Figure 4-1.)

Risk Management Steps	C2
Step 1 – Identify Hazards **Step 2** – Assess Hazards	Plan
Step 3 – Develop Controls/ Make Risk Decision	Prepare
Step 4 – Implement Controls **Step 5** – Supervise & Evaluate	Execute

Figure 4-1. CRM aligned with C2

PLAN

4-2. In the planning phase, commanders, leaders, and Soldiers identify the hazards that may be encountered in the execution of a mission, event, or operation and assess the potential impact of these hazards. Steps 1 and 2 of CRM provide the structure and situational awareness necessary to develop sound COAs and plans. Only then can a stated mission or purpose be accomplished within a predetermined level of risk.

PREPARE

4-3. During the preparation phase, leaders balance the risks (readiness, political, economic, and environmental) against the costs of each COA. Controls are developed and decisions made to eliminate unnecessary risks.

EXECUTE

4-4. CRM application in the execution phase involves implementation and supervision of the identified controls as well as evaluation of their effectiveness. Leaders continuously assess effectiveness of controls and adjust as necessary for changing or unexpected situations or events to maintain an acceptable level of risk for the operation.

ALIGNMENT WITH THE MDMP

4-5. CRM is a compatible decisionmaking process that aligns with the MDMP. CRM provides the standardized means by which to identify, assess, and control hazards and their potential impact on mission or readiness. CRM further provides a standard by which to define and communicate the potential impact of hazards (risks) in terms of potential loss compared to potential gain. The CRM process is aligned with each step of the MDMP. Figure 4-2 illustrates this alignment.

Military Decision-making Process	Risk Management Steps				
	Step 1 Identify Hazards	Step 2 Assess Hazards	Step 3 Develop Controls (+) Decision	Step 4 Implement Controls	Step 5 Supervise (+) Evaluate
Mission Receipt	X				
Mission Analysis	X	X			
COA Development	X	X	X		
COA Analysis	X	X	X		
COA Comparison			X		
COA Approval			X		
Orders Production			X	X	
Rehearsal	X	X	X	X	X
Execution/Assessment	X	X	X	X	X

Figure 4-2. CRM aligned with the MDMP

4-6. Step 1 *(Hazard Identification*) is an on-going process accomplished sequentially through the steps of mission receipt, mission analysis, COA development and analysis. Hazard identification is also an integral part of the rehearsal and execution phases of the MDMP.

4-7. Step 2 (*Access Hazards*) is accomplished in conjunction with mission analysis, COA development, and COA analysis steps of the MDMP. As with step 1, hazards are continuously assessed in the rehearsal and execution steps.

4-8. Step 3 (*Develop Controls* and *Make Risk Decisions*). The actions for this step are accomplished with COA development, COA comparison, and COA approval steps of the MDMP. As with the previous steps, it is also applied to rehearsal and execution steps.

4-9. Step 4 (*Implement Controls*) CRM controls are assigned during the orders production, rehearsal, and execution steps of the MDMP.

4-10. Step 5 *(Supervise and Evaluate*). Leaders continuously assess effectiveness of controls, changing, or unexpected situations or events and adjust as necessary to maintain an acceptable level of risk for the operation. These steps are also part of the follow-on actions for lessons-learned during the rehearsal, execution, and AAR process.

4-11. CRM is applied throughout the MDMP. Figure 4-3 shows the seven steps of the MDMP and the required actions for both the input and output. Succeeding paragraphs review the MDMP and explain in detail how and where CRM is applied.

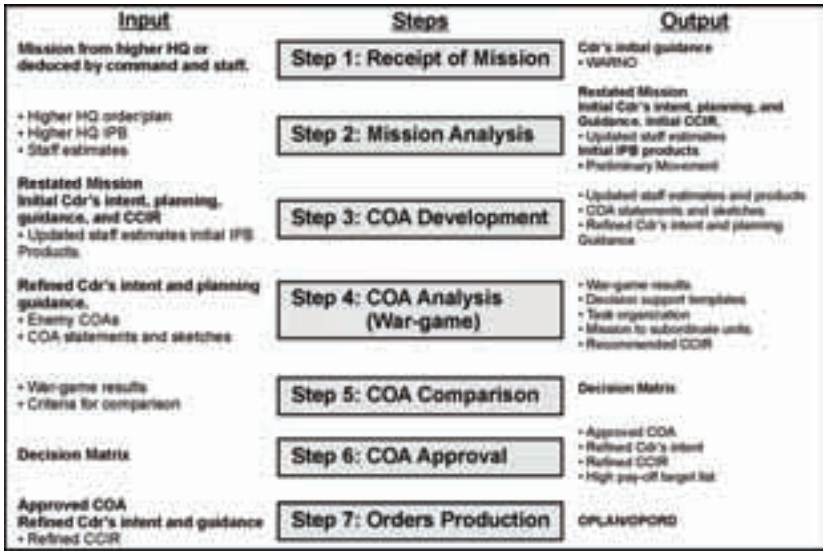


Figure 4-3. Input and output for the MDMP

STEPS OF THE MDMP

STEP 1- RECEIPT OF THE MISSION

4-12. MDMP starts with the receipt of a mission. Mission receipt can be formal in the form of written orders, directives, or informal verbal communication. In either case the commander must ensure a thorough understanding of the senior commander's intent and acceptable level of risk. The commander will analyze the assigned mission to be accomplished and consider the possible implied or subsequent missions.

4-13. Commanders should consider the following elements of CRM:

- Risk Acceptance Level. The higher HQ WARNO should be examined to ascertain if the commander has provided any specific guidance on the level of risk (Extremely High, High, Medium, or Low) that each subordinate commander can accept.
- METT-TC Factors. The factors of METT-TC are the framework for identifying hazards during the course of the MDMP. The higher HQ may have access to assets that subordinate elements do not. This is particularly true of intelligence, reconnaissance, and weather elements that can see battlefield hazards associated with METT-TC.
- Assignment of Higher HQ Control Measures. Established controls should be clear in the WARNO and OPORD. The commander must carefully assess the impact of these controls on the mission, particularly in terms of required coordination, manpower, and equipment constraints that might detract from the primary mission. If a problem is encountered in mission execution due to the implementation of specific risk assessment controls, it should be reported immediately through the chain of command.

- Coordination of Controls with Adjacent Units. In some circumstances a unit's primary mission may be the implementation of a control measure to reduce the risk of a specific hazard to the higher HQ overall mission. This normally requires coordination with adjacent units to identify control measures and define procedures for the accomplishment of the specific task. It is imperative that the time for implementation, graphic control measures, and critical communication information be exchanged between the unit implementing the control and those units involved in other aspects of the mission. Passage of lines, river crossing, and screening missions are some examples of this type mission and control.

4-14. The commander's initial guidance should include or address the following considerations:

- The level of risk that subordinate commanders are authorized to accept for the mission. This should be considered in paragraph 3a (Concept of Operations).
- METT-TC hazards and/or related controls that may impact on the unit mission.

4-15. The WARNO is critical to the CRM process since it is the commander's first opportunity to identify and address the risks that may be associated with the operation. Figure 4-4 provides an example of how risk management information may be incorporated into a warning order. This information should be brief and clearly impart the general risk guidance, risk acceptance authority, and any hazards and controls that have been affected by the higher HQ or the issuing HQ. The overall risk of the operation should be addressed in paragraph 3a (Concept of Operations). Detailed information on how the risk level was determined is not normally included in the warning order, but can be found in the basic order. It is critical to provide CRM guidance in the initial warning order to provide planners and subordinate commanders the necessary understanding of the commander's intent and the level of risk he or she is willing to accept. Then these factors can be included in the development of COAs and plans. In some instances the warning order may be accompanied by an overlay containing the graphic control measures essential to the operation. Risk management information may also be included on the overlay. Figure 4-5 provides an example.

WARNING ORDER 1-31
References: 2d Inf. Div OPLAN 15-6, 15 OCT 06- Map Reference Ed 5 DMA, Series V755, Sheet 3665 IV.
Time Zone Used Throughout Order—Zulu
Task Organization—See Paragraph 1c.

1. SITUATION.
   a. Enemy Forces. At 021500Oct06 company sized insurgent forces have seized host nation landing strip at V1 (ES095818). Unit has only small arms with no indirect fire capability above 7.72. Enemy has not been observed with shoulder fired air defense weapons.
   b. Friendly Forces.
      (1) Host nation: 12th Inf. Bn. has withdrawn to blocking positions behind PL Hound.
      (2) 1st Bde. 2d Inf. Div. conducts air assault to secure airfield at Obj. Fox and destroy insurgent forces occupying.
      (3) Secure Obj. Fox and drive insurgent forces toward blocking positions along PL Hound.
2. MISSION. At 150400Oct06 1st Bn 1-5 Inf conducts air assault into LZ 5 and attacks on Axis Viper to secure Obj. Eagle.
3. EXECUTION.
   a. Concept of Operations. 1-5 Inf conducts air assault on Axis Red to LZ 5 with two companies. Conducts ground assault on Axis Viper to seize Obj. Eagle. Overall Risk: Moderate
   b. Tasks to maneuver units.
      (1) A/2-47 Avn—Occupy AA Blue. SP 150400Oct06 Axis Red. Conduct air assault into LZ 5.
      (2) 1-5 Inf—Conduct air assault into LZ 5. Atk w/two companies on Axis Viper to destroy insurgent forces on Obj. Eagle.
      (3) B/1-5 Inf—Atk on Axis Viper to destroy insurgent forces.
      (4) C/1-5 Inf—Follow B/1-5 Inf as reserve on Axis Viper. Be prepared to assume mission of lead element.
      (5) A/275 Atk Helicopter—Provide route security along Axis Red. Direct support assault onto Obj. eagle.
      (6) B/146 FA—DS to 1-5 Inf.
   c. Coordinating instructions.
      (1) Time Line
         150115Oct06—Sugit elements in place in AA Blue.
         150300Oct06—All maneuver units occupy AA Blue.
         150330Oct06—Load up A/C complete.
         150400Oct06—SP/Lift Off.
         150600Oct06—LZ 5.
      (2) Orders Group 142300Oct06.
      (3) Priority Fire—Axis Red: A/2-47, Axis Viper: B/1-5 Inf.
      (4) Risk Guidance:
         Hazard: 35ft. power lines parallel PL Wolf.
         Control: 1 Mile out, assume 100ft. AGL until clear of line.
         Hazard: Insurgent forces may occupy LZ 5.
         Control: A/275 ATK screen LZ 5 and engage insurgent forces prior arrival of assault elements.
4. SERVICE SUPPORT. No change from original order.
5. COMMAND & SIGNAL. No change from original order.

ACKNOWLEDGE

Figure 4-4. Sample WARNO

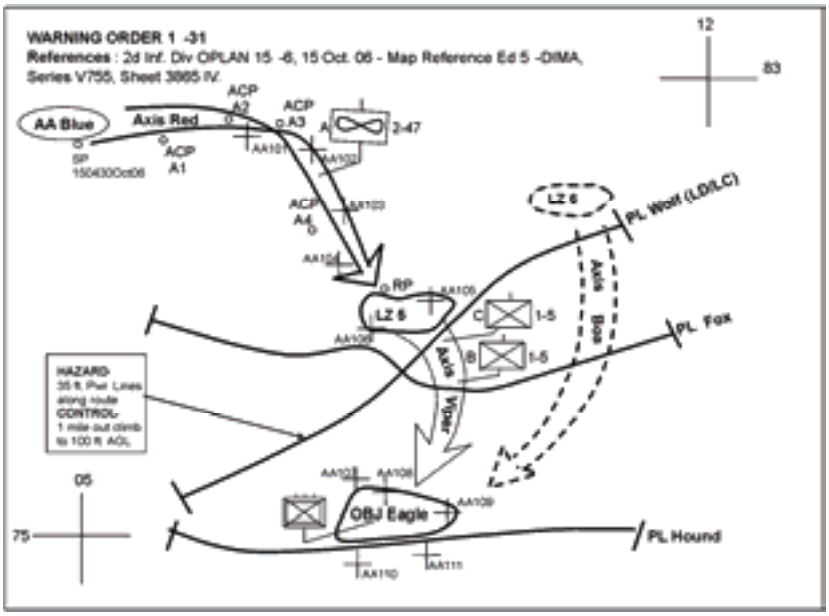


Figure 4-5. Sample overlay

STEP 2- MISSION ANALYSIS

4-16. CRM application is crucial to the refinement of command and staff situational awareness associated with the mission. It is integrated into the 17 tasks of the mission analysis process and remains a constant consideration as staffs maintain running estimates and assessments necessary for timely mission analysis. The following subparagraphs sequentially depict how CRM is applied to the mission analysis and its associated products.

Task 1 – Analyze Higher HQ Order

4-17. Careful examination and analysis of the higher HQ' order will identify any changes from the original warning order and any follow-on or implied missions. Specific METT-TC hazards are confirmed and higher HQ controls are identified for implementation. Depending on the organizational level, the higher HQ order may address the hazards and controls in one general risk assessment or a risk assessment for each specific staff annex. The following areas should be reviewed before beginning to write supporting risk assessments.

- Operational time line.
- Missions of adjacent units.
- Risk guidance from paragraph 3d (*Coordinating Instructions*), subparagraph 3 (*Risk Reduction Control Measures*) that identifies those controls that may not be included in the

unit SOP. These controls should be closely checked for special recognition and fratricide prevention measures.

- Each respective staff estimate contains risk guidance and/or specific risk assessments that address hazards/controls identified in the higher HQ order or any that surfaced during the process of making the estimate. The G3/S3 is responsible to provide a consolidated risk assessment for the entire mission. The chief of staff or executive officer (XO) coordinates the risk assessments for staff elements within the unit. The safety officer/manager provides technical CRM expertise to the commander and staff. Figure 4-6 provides an example of how risk management information may be included in a generic staff estimate format.

1. MISSION. Show the restated mission

2. SITUATION & CONSIDERATIONS.
   a. Characteristics of the area of operations
      (1) Weather. State how the military aspects of weather affect the staff section's functional area
      Risk Assessment Note: ***State the specific level of risk (Extremely High, High, Moderate, or Low) that is created from hazards associated with the military aspects of weather. Include types of controls to reduce the risk to a level defined in command guidance.***
      (2) Terrain. State how the aspects of the terrain affect the staff section's functional area.
      Risk Assessment Note: ***State the specific level of risk (Extremely High, High, Moderate, or Low) that is created from hazards associated with the military aspects of terrain. Include types of controls to reduce the risk to a level defined in command guidance***
      Civil Considerations. State how political, economic, sociological, and psychological factors and infrastructure affect the staff section's functional area.
      Other Pertinent Facts. State any other pertinent facts and how they affect the staff section's functional areas.
   b. Enemy Forces. Discuss enemy's dispositions, compositions, strength, capabilities and COAs as they affect the staff section's functional area.
      Risk Assessment Note. State any particular tactical risk hazards that may result from the enemy disposition and capabilities.
   c. Friendly Forces.
      (1) List the current status of resources within the staff section's functional area.
      (2) List the current status of other resources that affect the staff section's functional area.
      (3) Compare requirements with capabilities. Recommend solutions for discrepancies.
      Risk Assessment Note. Be alert to any hazards that may be created by units operating forward or adjacent to friendly forces. The aspects of weapons capability and functionality must be scrutinized closely, especially for issues related to overhead fire, no fire zones, limits of advance, etc.
   d. Assumptions. List any assumptions that affect the staff section's functional area.
      Risk Assessment Note. Care must be taken here to ensure that an assumption does not create a hazardous situation that will affect the overall risk level of the operation.

3. COURSES OF ACTION.
   a. List the friendly COAs that were war-gamed.
   b. List evaluation criteria identified during COA analysis. All staff sections use the same evaluation criteria.
      Risk Assessment Note. Ensure that both Accident and Tactical risks developed from METT-TC analysis are included for each COA.

4. ANALYSIS. Analyze each COA using the evaluation criteria identified during COA analysis.

5. COMPARISON. Compare COAs. Rank order COAs for each key consideration. A decision matrix usually supports comparison.
   Risk Assessment Note. Ensure the decision matrix clearly visualizes the level of risk and primary hazards/controls for each COA.

6. RECOMMENDATION AND CONCLUSIONS. Recommend most supportable COA from the staff perspective. List issues, deficiencies and ***risks*** with recommendations to reduce their impact.

Figure 4-6. Sample staff estimate

Task 2 - Perform Initial IPB

4-18. The IPB is an analytical methodology used to reduce uncertainties concerning enemy, environment, and terrain for all types of operations. The IPB estimate will include:

- Common hazards and recommended controls.
- Hazards from gaps in intelligence and recommended controls.
- Hazards from enemy intelligence gathering and recommended controls.

4-19. CRM is integrated into the four steps of the IPB to assess risk from all of the factors of METT-TC simultaneously.

- Define the battlefield environment. As the areas of interest and intelligence gaps are assessed, a risk assessment is made to determine risk that may be a result from the enemy's anticipated action.
- Describe the battlefield effects. Risk assessments are performed to support the evaluation of the effects of terrain, weather, and civil consideration. Composite risk assessments are made simultaneously. They are associated with both enemy and friendly avenues of approach, battle positions, and engagement areas.
- Evaluate the threat. Risk assessments are performed to ascertain how the enemy's organization and combat power might adversely affect the unit's mission. Although the focus is on the potential for the enemy's actions to create hazards, environmental hazards and terrain hazards cannot be overlooked.
- Determine COAs. Using the information gained in the previous steps, a composite final risk assessment is performed to determine the level of risk associated with each COA.

Task 3 - Determine Specified and Implied Tasks

4-20. A task is a clearly defined and measurable activity accomplished by Soldiers, units, and organizations. CRM will be applied to the review of specified and implied tasks to ensure the following:

- Specified tasks within paragraph 2-5 of the higher HQ order are addressed and prioritized and controls are applied to all identified operational hazards.
- Implied tasks are synchronized to support the specified task and to not create additional hazards.
- Risk assessments are prepared and coordinated to support the task.

Task 4 - Review Available Assets

4-21. An in-depth analysis is conducted to determine if the current task organization and resources are sufficient to support a successful mission. Are hazards created due to the insufficiency of manpower, supplies, and/or units to accomplish the mission?

Task 5 - Determine Constraints

4-22. Constraints are restrictions placed on the mission by higher HQ. This guidance is normally found in paragraph 3 of the higher HQ order within paragraphs that apply to the scheme of maneuver, concept of the operations, or coordinating instructions. Specific control measures within the main body or annex of the higher HQ order may be required to address specific hazards to the overall mission. Any staff risk assessments must consider these constraints.

Task 6 - Identify Critical Facts and Assumptions

4-23. Facts are known information about a current situation. Assumptions are beliefs based on experience that a specific reaction will result from an action. As the mission or

operation develops, some assumptions may or may not become facts. Any assessment based on these assumptions must be adjusted to accommodate the situation with appropriate controls. From the risk management perspective, risk assessments should be performed to determine if any assumption could lead to the creation of a new hazard that impacts on the risk level of the mission.

Task 7 - Perform Risk Assessments

4-24. This is the first formally documented risk assessment within the 17 tasks of mission analysis. It combines all the risk assessment information that was acquired during the following:

- Analysis of the higher HQ order.
- Initial IPB.
- Review of available assets.
- Determination of constraints.

4-25. The risk assessment includes hazards, hazard assessments, and suggested initial controls from each staff estimate and presents them in a visual format that can be used during the delivery of the mission analysis brief.

4-26. The risk assessment worksheet may be used as part of the output for individual staff estimates and IPB. Normally the matrix displays the various staff estimates with the hazards, assessment levels, and suggested controls applicable to the mission. It allows the staff to see the overall direction the risk management effort should take to support the mission. It also provides a vehicle to synchronize the overall hazard control effort. Figure 4-7 depicts an example of a partially completed worksheet.

MISSION ANALYSIS RISK ASSESSMENT			
STAFF ESTIMATES	HAZARD	ASSESSMENT	SUGGESTED CONTROLS
Intelligence Estimate			
1. Synchronization Plan	Host Nation 125 Inf Bde has no high tech collection capability. Sct Platoons are dismounted without Night Vision capability	High Risk: Enemy forces in 125 Inf Bde Sector have advanced collection capability with night vision devices down to squad level.	Consider attachment of reserve Bn Sct squads to augment 125 Inf Bde.
3. Mobility/Counter-mobility	High water levels and swift currents make the three fords on the Uses River impassable	High Risk: water levels are not expected to drop for the next 48 hours	Deploy two AVLBs at ford sites

Figure 4-7. Sample risk assessment

Task 9 - Determine the Initial ISR Plan

4-27. The risk assessment information developed during the IPB is used in the development of intelligence, surveillance, and reconnaissance (ISR). As with the IPB, risk management efforts are placed on hazards created by gaps in intelligence gathering and applying immediate controls to these gaps. If required, controls may be applied to—

- Utilization of surveillance and reconnaissance assets
- Task organization shortfalls
- Fire support coordination measures
- Medical evaluation provisions
- Supporting risk assessment worksheet is usually prepared as the output for ISR plan.

Task 10 - Update the Operational Time Line

4-28. As updated information arrives, the commander and staff examine the mission and its associated tasks within the allocated time line. From the aspect of tactical risk, the windows of opportunity are assessed against the periods when exposure to the enemy will be the greatest. From the hazard risk perspective, critical unit movements and the risk level for the terrain and weather conditions must be reviewed and assessed to determine their potential impact on the mission.

Task 11 - Write the Restated Mission

4-29. Risk management information is not normally included in the restated mission. However, a brief statement defining overall risk tolerance may be included. See Figure 4-8.

AT D-DAY, H-HOUR 052300JUN07 2D BDE 25TH MECH SEIZES THE INTERSECTION AT OBJECTIVE FOX VIC GI856987 TO ALLOW FOLLOW ON ELEMENTS TO CONDUCT PASSAGE AND SEIZE OBJECTIVE WOLF. (COMMANDER'S RISK TOLERANCE)

Figure 4-8. Risk management application to step 2 of the MDMP

Task 12 - Deliver a Mission Analysis Briefing.

4-30. During the mission analysis briefing, staff members present the commander with only the relevant information needed for an accurate situational understanding. The risk assessment information provided from each individual staff section must also be relevant and sufficiently broad enough to provide an accurate picture of the potential hazards and possible controls that are required for success of the operation. In some cases, initial risk assessment information may be general in nature. However, it is refined and expanded during the COA development and analysis processes. Figures 4-9 through 4-19 present examples of briefing matrices that each staff section uses to present their risk

assessments for the mission analysis. These figures also include examples of the types of information that should be included in the brief.

G1/AG/S1 Risk Assessment	HAZARD	CONTROL
• Overall Soldier Readiness		
• Replacement versus Estimated Casualties	*Estimated 3 to 5 day delay in replacement of key fire support MOS during phase 1. Casualties to cannon crews could result in low rate of fire to support mission. (EXAMPLE)*	*Ensure cannon crews received additional cross-training with special drills operating with minimum personnel. (EXAMPLE)*
• Potential for Non-Battle Losses		
• Available Personnel Services & Support		

Figure 4-9. Sample risk assessment for G1/AG/S1

G2/S2 Risk Assessment	HAZARD	CONTROL
• Battlefield Environment and Battlefield Effects	*Repeated artillery bombardment on South side of Objective Fox could create snow slides and make Route Tango impassable. (EXAMPLE)*	*Ensure adjustment fire missions fall on the Enemy positions on the North side of Objective Fox. (EXAMPLE)*
• Threat Combat Power		
• Intelligence gatherings Capabilities and Gaps		
• Enemy Intelligence Gathering Capabilities		

Figure 4-10. Sample risk assessment for G2/S2

G3/S3 Risk Assessment	HAZARD	CONTROL
• Specific Tasks	*The enemy elects to commit a Reserve to support Objective Fox. (EXAMPLE)*	*Priority close air support and artillery on approach routes North of Objective Fox. (EXAMPLE)*
• Implied Tasks		
• Subordinate Unit Action		
• Task Organization		

Figure 4-11. Sample risk assessment for G3/S3

G4/S4 Risk Assessment	HAZARD	CONTROL
• Class of Supply Status		
• Equipment Readiness	*1-76 Armor remaining life on 15 M-1 Tanks down to 50 rounds. Insufficient time to replace tubes prior to start of operation. (EXAMPLE)*	*Action #1 – Run borescope & Pull-Over on low round tanks to ascertain if life can be extended. Action #2 – Consider dispersing low round Tanks throughout Battalion where no single Unit will be directly impacted. (EXAMPLE)*
• Combat Vehicle & Weapon Availability Status		
• Availability of Transportation assets		

Figure 4-12. Sample risk assessment for G4/S4

G5/S5 Risk Assessment	HAZARD	CONTROL
• Effect of operation on civilian population		
• Host Nation Support		
• Projected Target List	*A historic 250 year old church is located within Target Group Alpha 6 Target Aa10153. (EXAMPLE)*	*Do not fire Target Aa10153 unless heavy resistance is encountered. Brigade approval for all air strikes. (EXAMPLE)*
• Nongovernmental organizations operating in the Area of Operations		

Figure 4-13. Sample risk assessment for G5/S5

G6/S6 Risk Assessment	HAZARD	CONTROL
• Communications & information system maintenance status	*Host nation 114 Infantry Bde does not have secure FM below Battalion Level. (EXAMPLE)*	*Attached communication liaison team to each host nation battalion. (EXAMPLE)*
• Available communications assets		
• Higher HQ Communications Plan		

Figure 4-14. Sample risk assessment for G6/S6

Air & Missile Defense	HAZARD	CONTROL
• Status of Air & Missile Defense Assets	*Host nation forces have proliferated hand held short range air defense down to squad TM level. Outdated communications assets may make transmission of ADA weapons status to lower level. (EXAMPLE)*	*Advise all liaisons teams and aircrews of this situation. (EXAMPLE)*
• Airspace Control measures		
• Enemy Air Capabilities		

Figure 4-15. Sample risk assessment for air and missile defense coordination

Fire Support Coordination	HAZARD	CONTROL
• Fire Support capabilities		
• Recommended tasks for Fire Support		
• Battlefield geometry on Fire Support	*The Southeast boundary for Target Area Fox has no clearly identified terrain features other than a slight slope of the ground.*	*Units operating within 100 meters of Target Area Fox should verify locations of subordinate Elements prior to executing fire mission in this area.*
• Protected Target List		

Figure 4-16. Sample risk assessment for fire support coordination

Engineer Coordination	HAZARD	CONTROL
• Terrain Analysis & Visualization		
• Status of Engineer Assets	*Backhoe capability will not be available until Phase II of the mission due to out of sector mission.*	*Utilize bulldozer for partial excavation of infantry fighting positions.*
• Engineering Capabilities		

Figure 4-17. Sample risk assessment for engineer coordination

Nuclear, Biological and Chemical	HAZARD	CONTROL
• Assets available		
• NBC related constraints	*Density of non-combatant personnel in the built up area on Obj Wolf could result in risks if CS agents are employed in house to house clearing.*	*Decision to use CS agents approved only at Battalion level.*
• MOPP status		
• Troop Safety Criteria		

Figure 4-18. Sample risk assessment for NBC coordination

Surgeon/ Medical	HAZARD	CONTROL
• Available medical assets		
• Class VII supply status	*Asbestos factory northeast of Objective Eagle may present health hazard to troops clearing building*	*Secure and bypass if possible. All Soldiers requiring entry must have PPE for Asbestos Hazard*
• Environment health effects		
• Evacuation capability		

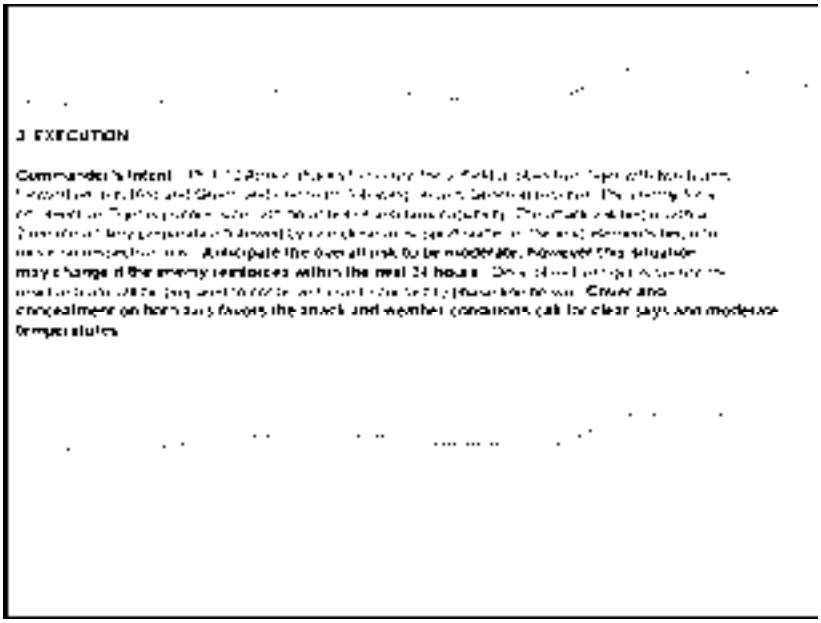
Figure 4-19. Sample risk assessment for medical coordination

Task 13 - Approve the Restated Mission

4-31. Normally the commander does not include risk management information in the mission statement. However, when there is sufficient risk to require additional focus, the commander may restate the level of risk he or she is willing to tolerate.

Task 14 - Develop the Initial Commander's Intent

4-32. The commander's intent is a clear concise statement of what the force must do and the conditions that must be met to succeed in obtaining the desired end state, it includes two key components, end state and key tasks. The overall risk of the operation is usually addressed within this paragraph. General comments may be made concerning the controls that are necessary to maintain the appropriate level of risk. An example of risk management information included in a commander's intent statement is at Figure 4-20.


3 EXECUTION

Commander's Intent

Anticipate the overall risk to be moderate. However this situation may change if the enemy reinforces within the next 24 hours.

Cover and concealment on hard days favors the attack and weather conditions call for clear days and moderate temperatures.

Figure 4-20. Sample execution paragraph

Task 15 - Issue Commander's Planning Guidance

4-33. The commander's planning guidance may be written or oral. In either form, it is imperative that the commander clearly state and define his or her risk guidance. This will ensure common understanding. The following information should be included in this guidance:

- Decisive operations and points.
- Potential key decisions.
- COAs for consideration.
- Initial commander’s critical information requirement (CCIR).
- Surveillance and reconnaissance.
- Risk.
- Military deception.
- Fires.
- Mobility and counter-mobility.
- Security measures.
- Priorities of the WFF.
- Operational time line.
- Type of order to issue.

- Collaborative planning sessions to be conducted.
- Movements to initiate.
- Types of rehearsals.
- Additional information.

4-34. Risk management information contained in the commander's guidance may address hazards and controls simultaneously.

- Specific risk assessment that address hazards and controls unique to the functional mission.
- A risk assessment matrix that visually portrays all the risk levels, hazards, and controls for the total mission.

Task 16 - Issue a WARNO

4-35. Refer to Figure 4-4 for an example of risk management information included in a WARNO. Paragraph 3a (Concept of Operations) provides initial risk guidance to the unit and the level of risk commander's are authorized to accept. Special focus is placed on alerting subordinate units to any special controls that will require extensive preparation time.

Task 17 - Review Facts and Assumptions

4-36. For the remainder of the MDMP the commander will conduct periodic review of all facts and assumptions. From the risk management perspective, the command and staff are alert to any specific changes in METT-TC that could increase or decrease the level of risk for an operation. Each staff section looks for situations that could create more hazards or change the effectiveness of existing controls.

STEP 3 - COA DEVELOPMENT

4-37. During the mission analysis, CRM was focused on identification and assessment of hazards. (Steps 1 and 2 of CRM). In COA development, CRM continues to identify and assess hazards but also begins to develop controls and make risk decisions. The process of COA development works hand in hand with the screening criteria outlined in FM 5-0.

4-38. Specific COAs and control measures should be examined in terms of the following criteria:

- Feasibility. Are the COAs or controls doable within the parameter of time, space, and resources available to the mission?
- Acceptability. For a COA to be acceptable the probability of a hazardous event occurring and the severity of such an event if it does occur should be within the risk tolerance level dictated by the commander. The level of risk is obtained by comparing the probability and severity of a hazardous event in the CRM matrix. See Figure 4-21. Both criteria are considered after controls are put in place. (See Step 2 of the CRM process in Chapter 1).

- Suitability. While the level of risk for a particular COA or control measure may meet acceptable criteria, it may not be suitable if it requires additional time or resources or if it may have a negative impact on future operations.
- Distinguishable. Each COA should differ significantly from other COAs. The use of reserves, task organization, timing, and maneuver scheme all impact mission accomplishment and each has to be considered independently in terms of the level of risk associated and the potential gains or benefits to be derived.
- Completeness. Each COA must be a stand-alone proposal that defines what must be accomplished in shaping operations for success in current operations and sustaining operations for future success.

RISK ASSESSMENT MATRIX						
		Probability				
Severity		Frequent A	Likely B	Occasional C	Seldom D	Unlikely E
Catastrophic	I	E	E	H	H	M
Critical	II	E	H	H	M	L
Marginal	III	H	M	M	L	L
Negligible	IV	M	L	L	L	L
E – Extremely High		H – High		M – Moderate		L – Low

Figure 4-21. Risk assessment matrix

4-39. Development of a COA requires seven steps. The following are CRM considerations for each step.

COA Step 1-Analyze Relative Combat Power.

4-40. Risk management considerations for each COA should include answers to the following questions:

- Maneuver. Are there any unit movements associated with the positioning of combat power that would expose units to hazardous terrain or adverse weather conditions?
- Firepower. Does the positioning of fire support assets or the maneuver scheme have the potential for fratricide?
- Protection. Is there adequate manpower and C2 available to affect control over hazards created by METT-TC?
- Information. Are intelligence and METT-TC information current and reliable enough to make a sound decision?

COA Step 2 - Generate Options

4-41. During the brainstorming of each COA, risk assessments are considered and aligned with the screening criteria in FM 5-0. For each COA the following risk management considerations should be made.

- Risk assessments are included as part of each COA.
- METT-TC hazards are addressed as part of decisive action, shaping, and sustaining options.

COA Step 3 - Array Initial Forces

4-42. In this step the risk management focus is to ensure that appropriate controls are applied to reduce the risk of hazards associated with the following:

- Relative combat power
- Forward edge of the battle area (FEBA) and movements to and from.
- Need to use deception operations
- Initial array of forces

COA Step 4 - Develop the Concept of Operations

4-43. CRM focus for this step is to ensure effective controls are in place to address hazards associated with the employment of the WFF. It is important that all risk be considered from the perspective of its potential impact on the mission. Key areas for consideration are as follows:

- Hazards created by simultaneous, sequential actions associated with the mission.
- Hazards created by insufficient combat power.
- Hazards or controls associated with either restrictive or permissive graphic control measures.

COA Step 5 - Assign HQ

4-44. Risk management focus for this step is in the area of task organization. Some hazards may be created by—

- Assigning more than 5 units to a particular task organization.
- Assigning a HQ that does not have sufficient command and control capability.
- Assigning units to a HQ that does not have the equipment capability to deal with METT-TC hazards.

COA Step 6 - Prepare COA Statements and Sketches

4-45. For COA statements, the risk management focus is on the composite risk. Normally a paragraph titled 'Risk' is included as last paragraph of each COA. Figure 4-21 provides an example of the risk paragraph. Should the commander require more detailed information concerning specific hazards and controls, the techniques depicted in Figures 4-10 through 4-20 may also be used.

COA Step 7 - COA Briefing

4-46. During this collaborative session all risk management information is presented to clearly show the impact on each specific COA. Particularly important is the impact of environmental hazards on an operation. The commander must be made aware of any circumstances where the enemy risks may support selection of a COA where the environmental risk may require manpower and equipment control measures that are not available.

STEPS 4 THROUGH 6 OF THE MDMP

4-47. The risk management information and assessment techniques covered in the previous steps will also be used in conducting COA analysis, comparison, and approval. Since these aspects are transparent and addressed adequately in FM 5-0 they will not be covered further.

Chapter 5

Application to Training Management

As part of the Army's training development process, the systems approach to training management (SAT) is a systematic approach to making training and educational decisions. The SAT process is used in Total Army School System Training Battalions and all subordinate organizations responsible for managing or performing training or related functions. This includes evaluating the training as well as the personnel, products, and institutions conducting the training. CRM is a vital component of the training-development process.

The major concern of all commanders is to ensure their Soldiers and units are trained to perform their mission to standard and survive. To ensure mission-focused training, Soldiers, staffs, and units must perform under realistic and stressful conditions. CRM balances benefits against potential losses. It provides commanders and leaders with the tools to accomplish realistic training while preserving the scarce resources of personnel, time, and equipment. When used properly, CRM is a training enabler. In this chapter we will present CRM application into the SAT process.

APPLICATION TO THE SAT PROCESS

5-1. The SAT is a systematic, spiral approach to making collective, individual, and self-development training decisions for the Army. It determines—

- Whether or not training is needed.
- What is to be trained.
- Who gets the training.
- How, how well, and where the training is presented.
- The training support and resources required to produce, distribute, implement, and evaluate those products.

5-2. The process involves five training related phases: analysis, design, development, implementation, and evaluation. Figure 5-1 shows a comparison between the SAT process, the MDMP, and the CRM process.

5-3. Evaluation is continuous throughout the SAT process with feedback for corrective actions. It permeates all phases. It is the cement that ensures training and training products

are effective in producing trained units and Soldiers. Products are evaluated either formally (product validation) or informally to determine currency, efficiency, and effectiveness. The entire process must operate within a given set of resources. The CRM process runs simultaneously and continuously to ensure training remains within the specified level of risk allowed for each event.

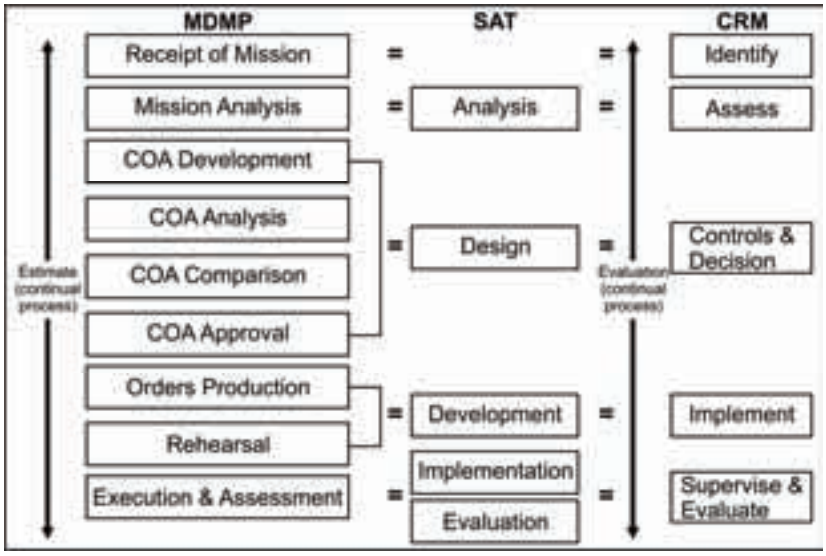


Figure 5-1. Comparison

INTEGRATION INTO REALISTIC TRAINING

5-4. Commanders and leaders are required to make informed risk decisions. This ensures that training is conducted realistically and in a manner that protects the well-being of the Soldiers being trained. This enables Soldiers, leaders, and units to survive and win over the full range of military operations.

5-5. Training developers and trainers provide safe training to achieve force protection by designing, developing, and implementing realistic, viable training that—

- Does not unnecessarily jeopardize lives and equipment.
- Eliminates or minimizes the risks involved in relation to the training benefits.
- Includes controls to eliminate/reduce the risk or hazard.
- Conserves and preserves resources.
- Complies with federal, state, and local laws, regulations, and restrictions.
- Integrates safety, risk management, and force protection considerations into training and training materials where appropriate.

5-6. Proponent training developers will ensure all training products—

- Include appropriate safety, risk, and protection statements, cautions, notes, and warnings.
- Identify training risk and assigns a risk level to every proponent lesson.
- Are validated by the Branch Safety Manager for CRM integration.
- Include controls necessary to minimize or eliminate hazards during training.
- Address CRM and the CRM process as it applies operationally to the training subject.

5-7. The training development process fixes responsibility, institutionalizes operational safety, and leads to decisionmaking at the command level appropriate to the identified level of risk. Using CRM in the training-development process ensures the following:

- Safe training.
- Fewer injuries and deaths.
- Reduced incidents of lost time.
- Lower costs (facility, training, and equipment repairs).

5-8. CRM is never complete. It is a continuing cycle that requires everyone be constantly alert to training risks and to take immediate action to eliminate them or reduce their severity. Safety, risk management, and accident prevention are a commander's, manager's, and individual's responsibility. Proponent training developers, trainers, and subordinate personnel should use the generic risk management information contained in training support products to review and update hazards and controls to adjust for current conditions.

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Chapter 6

Application to Other Functional Areas

The death of a Soldier in combat or due to an accident can have a devastating effect on a unit's morale and effectiveness. The effects of criminal acts, suicide, sexual assault, and reckless behavior can also cripple an organization's morale and destroy its combat effectiveness. Commanders and leaders must establish and maintain a command environment that fosters cohesion, team work, and performance to standard while caring for the well-being of the individual Soldier. Previous chapters discussed the application of CRM in tactical and nontactical situations, in the training development process, and as a life skill for individual activities. Commanders and leaders can also use the CRM process to identify behaviors or activities that may present hazards to a unit's morale and impact combat effectiveness. This chapter provides examples on how CRM will be applied to mitigate these hazards.

COMMAND ISSUES

6-1. The principles of CRM become indispensable in addressing issues that impact Soldiers both on and off the battlefield. Effective CRM is on-going and cyclic. The risk management process is integrated into the development of all SOPs and the development process for all policies that address issues of behavior, health, and criminal activity. The following paragraphs discuss CRM application in the areas of sexual assault prevention, suicide prevention, and privately owned vehicle (POV) accident prevention.

SEXUAL ASSAULT PREVENTION

6-2. The prevention of sexual assault is a command and an individual responsibility. Sexual assault destroys teamwork, undermines the good order and discipline of the military, destroys unit morale, and impacts personal combat readiness. Effective CRM identifies the potential hazards, conditions, or situations that may lead to criminal behavior. Early identification of these conditions and active intervention reduces the likelihood of Soldiers attempting sexual assault or becoming a victim of a sexual assault. The principles of risk management can play a pivotal role by assisting the commander with tools to enhance policy awareness and training. By conducting command climate assessments, complaints processing awareness briefings, and overall assistance concerning the prevention of sexual harassment, commanders can mitigate the risks associated with sexual harassment.

SUICIDE PREVENTION

6-3. Each year the Army needlessly loses Soldiers to suicide. Suicide continues to be a problem that demands every leader's attention. The causes of suicide are difficult to understand, but by applying the principles of risk management, leaders and Soldiers alike can better identify "at risk" Soldiers. They then can take appropriate actions to prevent the tragedy of suicide. The role of Army leadership in suicide prevention cannot be overemphasized. Military leaders monitor and protect those under their command. A military leader can more effectively promote and sustain protective factors in a military setting than in a civilian one. Quality leaders endorse, advocate, authorize, and even mandate suicide prevention as a priority. It is important for all commanders and leaders to recognize that mental wellness is part of the triad of overall individual fitness (along with physical and spiritual fitness).

POV ACCIDENT PREVENTION

6-4. POV accidents continue to be the leading cause of accidental death for Soldiers. Every Soldier has an individual responsibility to prevent accidents. Commanders and leaders must also be vigilant in the identification of high-risk behavior. CRM assists commanders and leaders in recognizing those hazards, behaviors, and/or situations that may lead to tragedy. The Director of Army Safety has prepared a POV risk management toolbox for commanders and leaders. This toolbox provides a comprehensive set of tools and controls that have proven successful in preventing POV accidents throughout the army. The toolbox and other automated CRM POV tools are available at https://crc.army.mil/home.

COMMAND EMPHASIS

6-5. By applying the principles of risk management when identifying hazards associated with suicide, sexual assault, and POV accident prevention, commanders can take the initiative to identify and mitigate risks associated with these hazardous behaviors and situations before they impact on our units. This in no way implies these are the only applications for CRM. This five-step process can be applied across the full spectrum of human activity to identify hazards, assess risk, and make decisions.

6-6. The principles of CRM as a decisionmaking tool are universal in application. The repeated use of the systematic CRM process reinforces application of the five steps to identify, assess, and control hazards and to make informed risk decisions in any situation. The principles of CRM become indispensable in addressing issues that impact Soldiers both on and off the battlefield. Effective CRM is on-going and cyclic. The risk management process will be integrated into the development of all SOPs and the development process for all policies that address issues of behavior, health, and criminal activity.

Appendix A

Instructions and Sample Form

A-1. See Table A-1 for instructions on completing DA Form 7566 (Composite Risk Management Worksheet).

Table A-1. Worksheet Instructions

Item	*Instruction*
1 through 4	Self explanatory.
5	Subtask relating to the mission or task in block1.
6	Hazards – Identify hazards by reviewing METT-TC factors for the mission or task. Additional factors include historical lessons learned, experience, judgment, equipment characteristics and warnings, and environmental considerations.
7	Initial Risk Level– Includes historical lessons learned; intuitive analyses, experience, judgment, equipment characteristics and warnings; and environmental considerations. Determine initial risk for each hazard by applying risk assessment matrix (Figure 2-4). Enter the risk level for each hazard.
8	Controls – Develop one or more controls for each hazard that will either eliminate the hazard or reduce the risk (probability and/or severity) of a hazardous incident. Specify who, what, where, why, when, and how for each control. Enter controls.
9	Residual Risk Level– Determine the residual risk for each hazard by applying the risk assessment matrix (Figure 2-4). Enter the residual risk level for each hazard.
10	How to Implement – Decide how each control will be put into effect or communicated to the personnel who will make it happen (written or verbal instruction; tactical, safety, garrison SOPs, rehearsals). Enter controls.
11	How to Supervise (Who) –Plan how each control will be monitored for implementation (continuous supervision, spot-checks) and reassess hazards as the situation changes. Determine if the controls worked and if they can be improved. Pass on lessons learned.

Table A-1. Worksheet Instructions

Item	*Instruction*
12	Was Control Effective – Indicate “Yes” or “No.” Review During AAR.
13	Overall Risk Level – Select the highest residual risk level and circle it. This becomes the overall mission or task risk level. The commander decides whether the controls are sufficient to accept the level of residual risk. If the risk is too great to continue the mission or task, the commander directs development of additional controls or modifies, changes, or rejects the COA.
14	Risk Decision Authority – Signed by the appropriate level of command.

A-2. The worksheet (Figures A-1 and A-2) provides a starting point to logically track the process of hazards and risks. It can be used to document risk management steps taken during planning, preparation, and execution of training and combat missions and tasks.

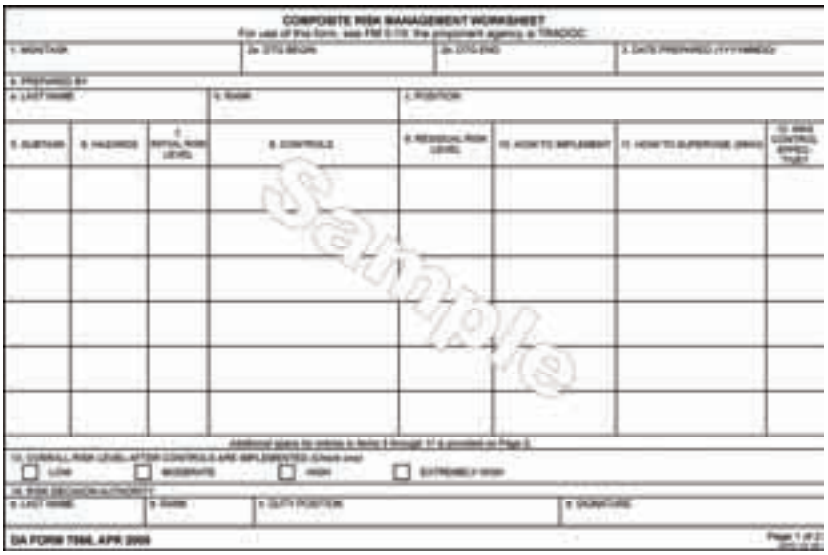

Figure A-1. Sample DA Form 7566, page 1

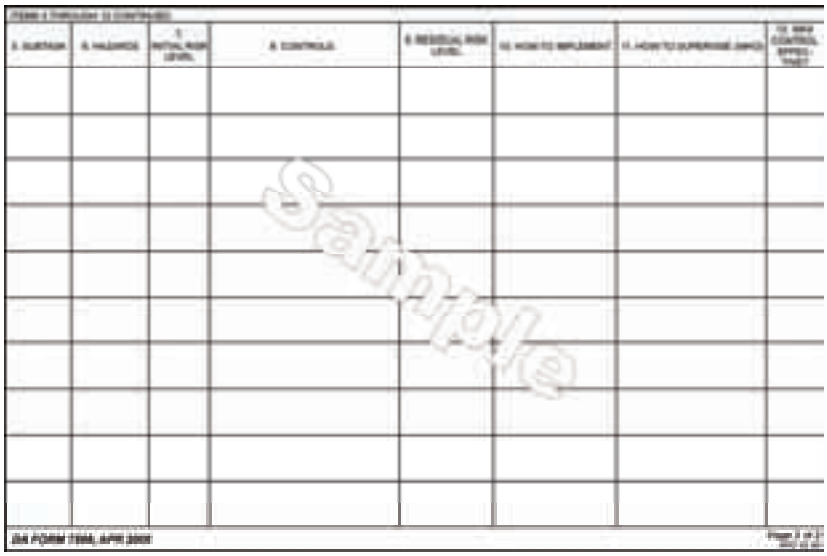

Figure A-2. Sample DA Form 7566, page 2

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Appendix B

Examples for Operations

CRM is a universal decisionmaking process used at every level of endeavor from the individual to large units or organizations. Its application is blind to the cause of the hazard. Whether it comes directly as the result of an enemy action or threat-based activity or as the result of other factors (hazard based), the CRM process attempts to identify, assess, and control those factors that may adversely affect the capabilities of a military unit or organization.

TACTICAL OPERATIONS

TACTICAL ROAD MARCH SCENARIO

Conduct a Tactical Road March

MISSION: Company A 3-69 Armor conducts a tactical road march in order to occupy a United Nations designated zone of separation PJ19003500 no later than (NLT) 0300 16 July XX to conduct peace enforcement operations.

SITUATION: The battalion S2 produced an IPB overlay indicating the presence of many known (marked) and unknown (unmarked) minefields throughout your area of operations. The minefields span your route of march. Intelligence indicates the enemy armed forces are operating in three-to-five person recon teams. If contact is made, the enemy is expected to break contact and not put up a fight. Although it is possible, it is not likely that there will be contact with the enemy.

CONDITIONS: As the company commander of A Company (or the 1st platoon leader of A Company) you have just received a warning order 1400 hours 15 July from your battalion commander alerting you of the upcoming mission. The unit has been in country for ten days and has been determined to combat ready. The battalion conducted extensive predeployment training and is well prepared for the terrain consisting of moderating rolling hills. The road network consists of unimproved roads with sharp curves and steep embankments. The weather has been in the mid 50s to 60s during the day and mid 40s at night. It has been raining for the last four days and rain in predicted to continue through the rest of the week.

FACTS:

- Company commander and platoon leader have been assigned for the past 10 months.
- The company has been task organized by the battalion with two tank platoons, one mechanized platoon, engineer platoon with combat engineer vehicles and armored combat earthmovers, an air defense artillery section, and a military police platoon.
- The two tank platoons do not have mine rollers.
- The two tank platoons and mechanized platoon are used to working together.
- The other elements were assigned when you entered the theater.
- All vehicles are in good shape.
- Map recon indicates the objective is 20 kilometers away.

METT-TC Analysis

MISSION: Conduct a tactical road march.

ENEMY: Enemy armed forces are operating in three-to-five person recon teams equipped with direct (individual weapons/machine guns) and anti-armor weapons)

TERRAIN: The road network consists of unimproved roads with sharp curves and steep embankments. The roads are generally bordered by open terrain and provide no cover and concealment for dismounted troops.

TROOPS: Experience level is high within the tank and mechanized units. The experience level of the troops recently attached to you is unknown.

TIME: 13 hours to start point

ANALYSIS:

- Threat-based risk: Land mine potential
- Hazard-based risk:
  - Rain/cold
  - Limited visibility
  - Surface traction
  - Road width
  - Fatigue
  - Inexperienced personnel

COMPOSITE RISK MANAGEMENT WORKSHEET
For use of this form, see FM 5-19; the proponent agency is TRADOC.

1. MISN/TASK	2a. DTG BEGIN	2b. DTG END	3. DATE PREPARED (YYYYMMDD)
CONDUCT A TACTICAL ROAD MARCH	151400JUL30	160300JUL30	XXXXXYYD

4. PREPARED BY

a. LAST NAME	b. RANK	c. POSITION
Smith	2LT	PLT LDR

5. SUBTASK	6. HAZARDS	7. INITIAL RISK LEVEL	8. CONTROLS	9. RESIDUAL RISK LEVEL	10. HOW TO IMPLEMENT	11. HOW TO SUPERVISE (WHO)	12. WAS CONTROL EFFECTIVE?
	Rainout	M	Ensure all personnel have proper weather gear, clean dry socks and gloves	L	PO/Rehearsal	PLT LDR/SFC	
	Operations under limited visibility (night)	H	Reduce convoy speeds Build in additional breaks to maintain convoy integrity	M	PO/Rehearsal	PLT LDR/SFC	
	Surface traction capability	H	Reduce convoy speeds Build in additional breaks to maintain convoy integrity	M	PO/Rehearsal	PLT LDR/SFC	
	Road width	M	Have Mps control cross points	L	PO/Rehearsal	PLT LDR/SFC	
	Land mine potential	H	Brief personnel on the threat Move mine clearing teams to the front of the convoy serials	M	SOP/Rehearsal	PLT LDR/SFC	
	Inexperienced personnel	M	Brief personnel on the threat Move mine clearing teams to the front of the convoy serials	L	Battle roster	PLT LDR/SFC	

Additional space for entries in Items 5 through 11 is provided on Page 2.

13. OVERALL RISK LEVEL AFTER CONTROLS ARE IMPLEMENTED (Check one)

☐ LOW ☒ MODERATE ☐ HIGH ☐ EXTREMELY HIGH

14. RISK DECISION AUTHORITY

a. LAST NAME	b. RANK	c. DUTY POSITION	d. SIGNATURE

DA FORM 7566, APR 2005 Page 1 of 2

Figure B-1. Sample worksheet for tactical road march scenario

ITEMS 5 THROUGH 12 CONTINUED

5. SUBTASK	6. HAZARDS	7. INITIAL RISK LEVEL	8. CONTROLS	9. RESIDUAL RISK LEVEL	10. HOW TO IMPLEMENT	11. HOW TO SUPERVISE (WHO)	12. WAS CONTROL EFFECTIVE?
Personnel Recovery	Personnel became separated from unit	H	Personnel Recovery Plan	M	FM 3-50.1, Army Personnel Recovery	Commander	

DA FORM 7566, APR 2005 Page 2 of 2

Figure B-1. Continued

AVIATION SCENARIO

Relocate the Forward Area Refueling Point

MISSION: The Petroleum, Oils, and Lubricants (POL) Platoon, HQ Company, 123d Attack (Atk) Battalion, will conduct forward area refueling point (FARP) aerial relocation operations in support of a night, AH-64 deep attack mission using K Troop 2/7 cavalry aircraft. The FARP will relocate using two of A Company, 123d Atk Battalions UH-60s from (NK 560029) and have the FARP operational NLT 040230 Nov XX at (NK 628031).

SITUATION: The Peoples' Army of Muldavia has stepped up operational tempo in your area. Since the Muldavian's last forward advance, enemy artillery has become a greater threat to the aviation assets of the 123d Atk Battalion. Enemy strength continues to increase with the insurgence of newly conscripted personnel. Friendly resistance patrols have discovered newly constructed enemy positions which appear to be designed for the

employment of air defense artillery (ADA) or surface-to-air missiles (SAMs). If construction of the sites is allowed to continue to completion and operational status is obtained, friendly aviation operations will be in serious jeopardy.

CONDITION: The HQ Company POL platoon leader has been at the National Training Center (NTC) for the past 2 weeks and conducting tactical operations for the past 3 days. It is 032100 Nov XX and orders have been received to relocate the FARP and have it operational at the new location (NK 598031) NLT 040230 Nov XX.

There are two UH-60s on site to move equipment and personnel to jump FARP (forward) location. There are four 500-gallon fuel blivets and the requirement is to operate four refueling points at one time using two forward air refueling equipment systems. The platoon is seriously over extended with other commitments to the battalion with only eight personnel to conduct this mission. Twenty percent of those personnel have recently transferred in from northern climates, have had minimal training with the unit, and have never conducted FARP operations with AH-64s.

The weather has been dry and hot, with no forecasted precipitation. The temperature is averaging 93 degrees Fahrenheit during the day and 68 degrees Fahrenheit at night. There will be moderate illumination throughout the operation.

FACTS: As POL platoon leader for the past four months you have planned and participated in two field training exercises in preparation for this NTC rotation. The company safety officer has conducted a force protection (safety) assessment of all personnel within the company. Based on that assessment you know the following:

- Results from the force protection (safety) assessment identified 10 percent of the Soldiers in the platoon are in the high or extremely high risk category for accidents (below standards due to lack of self discipline).
- The platoon has supported numerous FARP operations and POL support missions over the past year, but only two night operations using night-vision devices during that time.
- The new FARP location has been reported to have sparse vegetation, and scrub brush. Soil conditions are conducive for dust/brownout conditions. The S3 has completed an aerial recon of the location, but no one from the platoon is familiar with this site.

METT-TC Analysis

MISSION: Relocate FARP to support an AH-64 deep attack.

ENEMY: Indirect artillery with capability to range present FARP site and possible ADA/SAM capabilities.

TERRAIN: Plateau affords easy access, but is exposed on all sides. The weather is dry and hot, with no forecasted precipitation. The temperature is averaging 93 degrees Fahrenheit during the day and 68 degrees Fahrenheit at night. There will be moderate moon illumination throughout the operational time period.

TROOPS: Twenty percent of your troops have a low experience level for this task. Most of the Soldiers are first term enlistees with less than three years of service. Previous training assessments indicate acceptable levels of proficiency. Number of available Soldiers to conduct the mission is limited due to over extended support commitments.

TIME: Lack of training time due to enemy threat.

ANALYSIS:

- Threat-based risk:

  Air defense artillery threat,

  Terrain exposed to enemy fire.

- Hazard-based risk:

  Insufficient number of personnel.

  Limited visibility and unfamiliar terrain.

  Inexperienced personnel.

COMPOSITE RISK MANAGEMENT WORKSHEET
For use of this form, see FM 5-19; the proponent agency is TRADOC.

1. MISN/TASK	2a. DTG BEGIN	2b. DTG END	3. DATE PREPARED (YYYYMMMDD)
RELOCATE FARP OPERATIONS	02210006DNOVXX	0422SNOVXX	XXXXYYXX

4. PREPARED BY

a. LAST NAME	b. RANK	c. POSITION
Kerosene	1LT	POL PLT LDR

5. SUBTASK	6. HAZARDS	7. INITIAL RISK LEVEL	8. CONTROLS	9. RESIDUAL RISK LEVEL	10. HOW TO IMPLEMENT	11. HOW TO SUPERVISE (WHO)	12. WAS CONTROL EFFECTIVE?
	Crossing ops - Possible ADA threat	H	Rehearse react to near/far ambush MOPP 2 or LZ Ensure M-8 alarms operational Rehearse react to artillery fires/ADA fire	M	Verbal OPORD OPORD/PNES FM 17-12-1.2	Direct supervision Direct supervision PCC/PCI Direct supervision	
	Insufficient personnel to complete mission	E	Request supplemental personnel or relief from other commitments until completion of the mission	M	Verbal request Battle roster	Direct supervision	
	Inexperienced Soldiers and unreliable Soldier discipline	E	Put experienced personnel with inexperienced/high risk Soldiers	M	Verbal order	Direct supervision	
	Limited visibility - Night - Sandstorm/ red	E	- Establish adequate LZ spacing at FARP Ensure NVD/M-8 Gs operational - Re-emphasize brown-out reaction procedures to ground personnel	M	OPORD/TACSOP PNES Briefing	Direct supervision PCC/PCI Direct supervision	
	Limited visibility - Slingload ops - Friendly fire	E	- Ensure flight crews are current in NVG sling load operations - Establish fire support coordination measures	M	OPORD/ATM Trg records OPORD	PCC/PCI STREP Direct supervision	
	Terrain - Unfamiliar - Open exposure to enemy fires	E	(1) provide individual familiar with area to augment pilotage during insertion Construct hasty fighting positions upon arrival	M	Verbal request OPORD	Direct supervision Direct supervision	

Additional space for entries in Items 5 through 11 is provided on Page 2.

13. OVERALL RISK LEVEL AFTER CONTROLS ARE IMPLEMENTED (Check one)
☐ LOW ☒ MODERATE ☐ HIGH ☐ EXTREMELY HIGH

14. RISK DECISION AUTHORITY

a. LAST NAME	b. RANK	c. DUTY POSITION	d. SIGNATURE

DA FORM 7566, APR 2005 Page 1 of 2

Figure B-2. Sample worksheet for aviation scenario

ITEMS 5 THROUGH 12 CONTINUED

5. SUBTASK	6. HAZARDS	7. INITIAL RISK LEVEL	8. CONTROLS	9. RESIDUAL RISK LEVEL	10. HOW TO IMPLEMENT	11. HOW TO SUPERVISE (WHO)	12. WAS CONTROL EFFEC-TIVE?
Personnel Recovery	Personnel became separated from unit	H	Personnel Recovery Plan	M	FM 3-50.1, Army Personnel Recovery	Commander	

DA FORM 7566, APR 2006 Page 2 of 2

Figure B-2. Continued

FIELD ARTILLERY SCENARIO

Deliver Field Artillery Fires

MISSION: Provide direct support field artillery fires in support of 3d Brigade's movement to contact NLT 240400 Feb XX, to locate and destroy the Tawakana Division of the Iraqi Republican Guard.

SITUATION: It is now 211200 Feb XX. Battery has been deployed to the southwest Asian theater since 29 Dec. The Tawakana Division has been preparing and improving their defensive positions, incorporating tank ditches, minefields, and other obstacle belts since late September. After almost four weeks of air strikes, intelligence estimates their combat power at 95 percent with full operational capability to employ persistent and nonpersistent chemical agents.

CONDITIONS: Battery is at 102 percent personnel strength. 95 percent of these Soldiers have never participated in any type of combat operation. In November the battery received the new M109A6 (Paladin). The first

actual training exercise (firing) with this system was on 3 Jan. Gun crews are well trained in crew drills, but, section chiefs are rated as partially trained because of their lack of training on the new electronic equipment which came with the M109A6. Soldiers are acclimated to the cool weather in the desert. The predicted weather for 24 Feb is severe wind (30+ knots) causing sand storms with visibility less than 50 feet. No precipitation is predicted.

FACTS: The commander has been in command for the past 13 months and Soldiers have fired over 3,000 rounds safely in the M109A3, but, have only fired 250 rounds from the M109A6. Based on training and experience, you know the following:

- The Tawakana Division has excellent counterbattery acquisition systems and is well trained in processing counterfire missions.
- The dust and cool weather has caused numerous failures of the electronic devices on the M109A6 and in your fire direction center (FDC).
- During the last Army Training and Evaluation Program, your battery FDC was rated partially trained in manual fire direction procedures.
- Battery has not conducted any collective training with the 3d brigade maneuver elements on breaching/reducing obstacles. There are no organic engineer assets with the battalion.
- From previous experience at the Combat Maneuver Training Center and NTC, there is little time for sleep/rest in a movement-to-contact operation. There is a distinct possibility the unit will be in mission oriented protective posture (MOPP) 4 for a long period of time if the enemy sticks to their doctrine of employment of chemical munitions.

METT-TC Analysis

MISSION: Provide direct fire support in support of 3d Brigade's movement to contact.

ENEMY: Tawakan Division is at 95 percent combat power. They have been preparing and improving their defensive positions and incorporating obstacles (tank ditches, minefields, and obstacle belts). They are fully capable of delivering persistent and nonpersistent chemical agents. They are well trained in counter-fire missions.

TERRAIN: May encounter enemy obstacles. Severe winds (30+ knots), sandstorms and dust will limit visibility to 50 feet. Dust can cause equipment malfunctions.

TROOPS: Personnel strength is at 102 percent. 95 percent of the Soldiers have never participated in combat operations. The FDC is partially trained

in manual fire direction procedures. Crews are well trained in crew drills; however, they lack experience with the new equipment. The Soldiers are acclimated.

TIME: Approximately 3 days to prepare.

ANALYSIS:

- Threat-based risk:

  Enemy obstacles.

  Enemy counterbattery capabilities.

- Hazard-based risk:

  Inexperienced personnel.

  Soldier fatigue.

  Adverse environment.

COMPOSITE RISK MANAGEMENT WORKSHEET

For use of this form, see FM 5-19; the proponent agency is TRADOC.

1. MISSION	2a. DTG BEGIN	2b. DTG END	3. DATE PREPARED (YYYYMMDD)
DELIVERY OF ARTILLERY FIRES	240400FEB04	UNKNOWN	XXXX0321

4. PREPARED BY

a. LAST NAME	b. RANK	c. POSITION
Black	CPT	BATTERY CDR

5. SUBTASK	6. HAZARDS	7. INITIAL RISK LEVEL	8. CONTROLS	9. RESIDUAL RISK LEVEL	10. HOW TO IMPLEMENT	11. HOW TO SUPERVISE (WHO)	12. WAS CONTROL EFFECTIVE?
	Enemy ops - Obstacles	E	Request engineer support Pre-mission briefing with engineers to identify marking of obstacle lanes.	H	Coordination with higher command FRAGO	Direct supervision	
	Inexperienced personnel - New equipt fire procedures	E	Rehearse procedures of electronic eq and manual fire direction drills Practice procedures for tactical displacement	H	FRAGO Crew drills	Direct supervision	
	Inexperienced personnel - Poor reaction to enemy counterfire	E	Practice procedures for tactical displacement	H	Rehearsals	Direct supervision	
	Adverse conditions - Eq damage/ failure	H	Secure exposed equipment Ensure PMCS for extreme conditions enforced Request additional discharge of electronic LRUs for PLL	M	FRAGO TM-10, OPORD Coordination with higher command	Spot check Direct supervision Direct supervision	
	Adverse conditions - Limited visibility	H	Personnel wear protective goggles Decrease vehicle speed and intervals	M	OPORD OPORD	Spot check Spot check	
	Continuous ops - Soldier fatigue	H	Plenty of rest before SP Minimum staffing (vest) when the tactical situation permits Forward physical condition reports to HQ	M	Verbal Order FRAGO SITREP	Spot check Direct supervision	

Additional space for entries in Items 5 through 11 is provided on Page 2

13. OVERALL RISK LEVEL AFTER CONTROLS ARE IMPLEMENTED (Check one)

☐ LOW ☐ MODERATE ☒ HIGH ☐ EXTREMELY HIGH

14. RISK DECISION AUTHORITY

a. LAST NAME	b. RANK	c. DUTY POSITION	d. SIGNATURE

DA FORM 7566, APR 2005 Page 1 of 2

Figure B-3. Sample worksheet for field artillery scenario

ITEMS 5 THROUGH 12 CONTINUED

5. SUBTASK	6. HAZARDS	7. INITIAL RISK LEVEL	8. CONTROLS	9. RESIDUAL RISK LEVEL	10. HOW TO IMPLEMENT	11. HOW TO SUPERVISE (WHO)	12. WAS CONTROL EFFEC-TIVE?
Personnel Recovery	Personnel be-came separated from unit	H	Personnel Recovery Plan	M	FM 3-50.1, Army Personnel Recovery	Commander	

DA FORM 7566, APR 2005 Page 2 of 2

Figure B-3. Continued

NONTACTICAL OPERATIONS

BASE OPERATIONS SCENARIO

Base Operations

TASK: Store material in warehouse

MISSION: Move a pallet load of material from the receiving dock and store in the bin storage area.

SITUATION: Truckload of material just arrived at the loading dock.

CONDITION: As the supervisor in the warehousing section of the material movement division, your task is moving material just received at the loading dock to storage in the bin storage section of Warehouse 1216.

FACTS:

- The material is packaged 24 each (12 inches high x 30 inches long by 18 inches wide boxes) to a 48 inch by 48 inch (standard) pallet.
- The pallet must be moved by forklift or other mechanical lifting device from the receiving dock to the bin storage area.
- The bin storage is from ground level to 10 feet high.
- Material must be removed from the pallet and manually placed into storage bins.
- The activity does not have a training and licensing program for forklift and other lifting devices.
- Personnel learn their job duties through a short on-the-job training program consisting of working with a seasoned employee for one week.
- There is no training program for proper lifting techniques and back injury prevention.
- Some employees use back belts. There is no installation policy on use of back belts.
- There is no installation policy on use of personal protective equipment (PPE).

METT-TC ANALYSIS

MISSION: Store material in warehouse

ENEMY (disruptors): Material must be removed from the pallet and manually placed into storage bins.

TERRAIN: Storage bin 10 feet above ground level.

TROOPS (people): Personnel trained through an on-the-job training program. No training program for proper lifting techniques or back injury prevention.

TIME: Not a factor.

CIVILIANS (legal): No policy on the use of PPE.

ANALYSIS: (Hazard-based risk)

- Fork lift operators are not trained.
- Personnel are not trained on lifting techniques.
- No PPE policy.
- No approved ladder or fall protection training

COMPOSITE RISK MANAGEMENT WORKSHEET

For use of this form, see FM 5-19; the proponent agency is TRADOC.

1. MISN/TASK	2a. DTG BEGIN	2b. DTG END	3. DATE PREPARED (YYYYMMDD)
STORING MATERIAL IN A WAREHOUSE	221HFE3XX	UNKNOWN	XXXXX222

4. PREPARED BY

a. LAST NAME	b. RANK	c. POSITION
Natchum	CPT	BATTALION S-4

5. SUBTASK	6. HAZARDS	7. INITIAL RISK LEVEL	8. CONTROLS	9. RESIDUAL RISK LEVEL	10. HOW TO IMPLEMENT	11. HOW TO SUPERVISE (WHO)	12. WAS CONTROL EFFECTIVE?
	Untrained forklift operators	H	Train operators	L	SOP, training policy	Check records	
	No approved SOP	H	Develop SOP	L	Publish SOP	Check training	
	No training in proper lifting techniques	M	Provide training	L	SOP, training policy	Check records Spot check	
	No PPE policy	M	Develop and publish PPE policy, enforce policy	L	SOP Publish policy	Spot check	
	PPE not provided	M	Develop PPE SOP	L	Purchase and provide PPE as required	Spot check	
	No back-belt policy	M	Develop and publish back-belt policy	L	Publish and enforce policy	Spot check	
	No trg prog	M	Develop and implement training program	L	Provide training	Check records	
	No approved ladder or other device for over-head bin storage	M	Provide proper fall protection training, equipment, and approved ladder to employees	L	Purchase approved equipment	Spot check	

Additional space for entries in Items 5 through 11 is provided on Page 2.

13. OVERALL RISK LEVEL AFTER CONTROLS ARE IMPLEMENTED (Check one)

[X] LOW [ ] MODERATE [ ] HIGH [ ] EXTREMELY HIGH

14. RISK DECISION AUTHORITY

a. LAST NAME	b. RANK	c. DUTY POSITION	d. SIGNATURE

DA FORM 7566, APR 2005 Page 1 of 2

Figure B-4. Sample worksheet for base operations scenario

INDIVIDUAL AND OTHER APPLICATIONS

POV/PARTY SCENARIO

POV/Party Scenario

A commander has learned that a platoon within the company is having a party over the weekend. The party will take place at the off-post residence of an noncommissioned officer from the platoon. Soldiers will be driving their POVs/privately owned motorcycles (POMs) to the party. The commander knows that there will be alcohol at the party. Eight personnel from the platoon are under the legal drinking age.

COMPOSITE RISK MANAGEMENT WORKSHEET
For use of this form, see FM 5-19; the proponent agency is TRADOC.

1. MISN/TASK	2a. DTG BEGIN	2b. DTG END	3. DATE PREPARED (YYYYMMDD)
OFF DUTY PARTY	1800XXXXAAAA	2300XXXXAAAA	20060XXX

4. PREPARED BY

a. LAST NAME	b. RANK	c. POSITION
Smith	SFC	PLT SGT

5. SUBTASK	6. HAZARDS	7. INITIAL RISK LEVEL	8. CONTROLS	9. RESIDUAL RISK LEVEL	10. HOW TO IMPLEMENT	11. HOW TO SUPERVISE (WHO)	12. WAS CONTROL EFFECTIVE?
Alcohol	Driving under the influence	H	Develop unit pre-party plan contract Designated driver Taxi program Provide transportation to barracks/qtrs	L	Unit policy Pre-party plan	Host/senior Soldier at party 1SG/CDR approve plan	
			POV/POM keys collected and controlled at party		Pre-party plan	Plt leader visits party	
	Over consumption of alcohol	H	Regulate consumption Host/senior Soldier does not drink alcohol Serve food throughout the party	L	Unit policy Host/senior Soldier does not drink Pre-party plan	Host/senior Soldier at party Plt leader visits party	
			Restrict hours of party. Party ends prior to 2300.		Pre-party plan	Host/senior Soldier	
	Under age drinking	H	Alcohol service controlled by host Host/senior Soldier monitor underage Soldiers Availability of non-alcoholic beverages	L	Unit policy	Host/senior Soldier Plt leader visits party	

Additional space for entries in Items 5 through 11 is provided on Page 2.

13. OVERALL RISK LEVEL AFTER CONTROLS ARE IMPLEMENTED (Check one)
[X] LOW [ ] MODERATE [ ] HIGH [ ] EXTREMELY HIGH

14. RISK DECISION AUTHORITY

a. LAST NAME	b. RANK	c. DUTY POSITION	d. SIGNATURE

DA FORM 7566, APR 2005 — Page 1 of 2

Figure B-5. Sample worksheet for POV/party scenario

WEEKEND PASS SCENARIO

Weekend Pass

A unit has just redeployed from a one year overseas deployment and is preparing for a 96-hour pass. The commander knows that his or her Soldiers have not driven their POVs/POMs in the continental U.S. during the past year. The redeployment from theater has taken 46 hours with plane travel and refueling stops. Although fatigued, the Soldiers are very anxious to see their families and loved ones.

COMPOSITE RISK MANAGEMENT WORKSHEET

For use of this form, see FM 5-19; the proponent agency is TRADOC.

1. MISN/TASK	2a. DTG BEGIN	2b. DTG END	3. DATE PREPARED (YYYYMMDD)
WEEKEND PASS	100000XXXAAAA	230000XXXAAAA	20060000

4. PREPARED BY

a. LAST NAME	b. RANK	c. POSITION
Jones	CPT	Battalion Safety Officer

5. SUBTASK	6. HAZARDS	7. INITIAL RISK LEVEL	8. CONTROLS	9. RESIDUAL RISK LEVEL	10. HOW TO IMPLEMENT	11. HOW TO SUPERVISE (WHO)	12. WAS CONTROL EFFECTIVE?
Weekend Pass Driving	Driving	H	Establish maximum driving distance Encourage use of public transportation Provide refresher training covering safe driving habits/DOD and Army policy	H	Policy	Commander	
			Reinforce seatbelt usage Proper PPE for motorcyclists Conduct individual Soldier risk assessment		Safe checks ASMIS II	Commander	
			Individual Soldier counseling		Policy	All leaders	
	Fatigue	H	Restrict POV/POM operation for 24 hours following return/release Encourage use of second driver	M	Unit pre/ deployment policy	Commander	
	Driving under the influence	H	Designated driver program Taxi card program Encourage use of public transportation	M	Unit post deployment policy	Commander/All leaders	

Additional space for entries in Items 5 through 11 is provided on Page 2

13. OVERALL RISK LEVEL AFTER CONTROLS ARE IMPLEMENTED (Check one)

☐ LOW ☒ MODERATE ☐ HIGH ☐ EXTREMELY HIGH

14. RISK DECISION AUTHORITY

a. LAST NAME	b. RANK	c. DUTY POSITION	d. SIGNATURE

DA FORM 7566, APR 2005 Page 1 of 2

Figure B-6. Sample worksheet for weekend pass scenario

Glossary

SECTION I – ACRONYMS AND ABBREVIATIONS

A

AA	assembly area
AAR	after-action review
abn	airborne
ADA	air defense artillery
AGL	above ground level
APC	armored personnel carrier
Apr	April
AR	armor
Arty	artillery
ASMIS	Army Safety Management Information System
atk	attack
attn	attention
AVLB	armored vehicle-launched bridge
avn	aviation

B

bde	brigade
bn	battalion
BP	battle position

C

C2	command and control
C3	command, control, and communications
C4	command, control, communications, and computers
CAV	cavalry
CCIR	commander's critical information requirements
Cdr	commander
CMTC	Combat Maneuver Training Center
co	company
COA	course of action

CONUS	contintental United States
coord	coordinating
CRM	composite risk management
CS	chlorobenzalmalononitrile (riot-control agent, tear gas)

D

DA	Department of the Army
Dec	December
DIMA	Defense Imagery and Mapping Agency
DOD	Department of Defense
DS	direct support
DTG	date time group

E

E	extremely high
eq	equipment

F

FA	field artillery
FARP	forward arming and refueling point
FDC	fire direction center
Feb	February
FEBA	forward edge of battle area
FM	field manual; frequency modulated
FRAGO	fragmentary order
ft	feet

G

G1	assistant chief of staff, personnel
G2	assistant chief of staff, intelligence
G3	assistant chief of staff, operations and plans
G4	assistant chief of staff, logistics
G5	assistant chief of staff, plans
G6	assistant chief of staff, command, control, communications, and computer operations
G9	assistant chief of staff, civil affairs

H

H	high
HQ	headquarters
hrs	hours

I

IED	improvised explosive device
Inf	infantry
IPB	intelligence preparation of the battlefield
ISR	intelligence, surveillance, and reconnaissance

J

Jan	January
Jul	July

K

L

L	low
LC	line of contact
LD	line of departure
ldr	leader
LOA	limit of advance
LOGCAP	logistics civil augmentation program
LZ	landing zone

M

M	moderate
Mar	March
MDMP	military decisionmaking process
mech	mechanized
METL	mission-essential task list
METT-TC	mission, enemy, terrain and weather, troops and support available, time available, civil considerations
MG	machine gun
mgt	management
min	minute
mm	millimeter

MOPP	mission oriented protective posture
MOS	military occupational specialty
msn	mission

N

NBC	nuclear, biological, chemical
NFL	no-fire line
NGO	nongovernmental organization
NLT	no later than
Nov	November
NTC	National Training Center

O

OAKOC	observation and fields of fire, avenues of approach, key terrain, obstacles, and cover and concealment
obj	objective
Oct	October
OPLAN	operation plan
OPORD	operation order

P

PCC	precombat check
PCI	precombat inspection
PL	phase line
PLL	prescribed load list
plt	platoon
PMCS	preventive maintenance checks and service
POL	petroleum, oils, and lubricants
POM	privately owned motorcycle
POV	privately owned vehicle
PPE	personal protective equipment
prep	preparation
pwr	power

Q

qtr	quartering
qtrs	quarters

R

recon	reconnaissance
risk	Probability and severity of loss linked to hazards.
RMIS	Risk Management Information System
RPG	rocket-propelled grenade
rt	route

S

S1	personnel staff officer
S2	intelligence staff officer
S3	operations staff officer
S4	logistics staff officer
S5	plans staff officer
S6	command, control, communications, and computer operations officer
SAM	surface-to-air missile
SAT	systems approach to training
sct	scout
SFC	sergeant first class
SITREP	situation report
SOP	standing operating procedure
SP	start point
supt	support

T

TACSOP	tatical standing operating procedure
TDY	temporary duty
TF	task force
TLP	troop-leading procedures
TM	technical manual
tng	training
TRADOC	United States Army Training and Doctrine Command
TRP	target reference point

U

U.S.	United States
USARC	United States Army Readiness Center

UXO	unexploded ordnance

V

VA	Virginia

W

WARNO	warning order
WFF	warfighting functions

X

XO	executive officer

Y

Z

SECTION II – TERMS

A

assessment	An analytical process to determine an organization's current level of proficiency on a specific objective (for example, a training objective or risk management implementation)

B

base operations support	The provision of administrative and logistical services. It includes supply operations, materiel maintenance, personnel support, base services, and administrative services rendered by or through activities of the supporting installation.

C

controls	Actions taken to eliminate hazards or to reduce their risk.

D

danger	Exposure or vulnerability to harm or risk; the balance between the chance or probability of a hazardous incident, and the result of the hazardous incident.

E

evaluation	An analytical process to determine an organization's current level of proficiency on a specific objective. (for example, a training objective or risk management implementation.)
exposure	The frequency and length of time personnel and equipment are subjected to a hazard.

F

fratricide The employment of friendly weapons and munitions with the intent to kill the enemy or destroy his equipment or facilities, which results in unforeseen and unintentional death or injury to friendly personnel.

G

H

hazard A condition with the potential to cause injury, illness, or death of personnel; damage to or loss of equipment or property; or mission degradation.

I

inherently dangerous An activity or task containing a danger to life or limb that is a permanent and inseparable element of the activity.

J

K

L

leader Commanders, personnel in the chain of command (team, squad, section, platoon leader), and staff members having personnel supervisory responsibility.

M

N

O

operation A military action or the carrying out of a strategic, operational, tactical, service, training, or administrative military mission. The process of carrying on combat, including movement, supply, attack, defense, and maneuvers needed to gain the objectives of any battle or campaign.

P

probability In risk analysis, the likelihood that an event will occur. There are five degrees of probability: frequent (A), likely (B), occasional (C), seldom (D), and unlikely (E).

Q

R

risk Probability and severity of loss linked to hazards.

risk assessment The identification and assessment of hazards (the first

two steps of the composite risk management process).

risk decision The decision to accept or not accept the risks associated with an action; made by the commander, leader, or individual responsible for performing that action.

risk management The process of identifying, assessing, and controlling risks arising from operational factors and making decisions that balance risk cost with mission benefits.

risk tolerance The level of risk the command is willing to accept.

S

severity The expected consequence of an event (hazardous incident) in terms of degree of injury, property damage, or other mission inpairing factors (loss of combat power and so on) that could occur.

T

U

V

W

X

Y

Z

References

SOURCES USED

These are the sources quoted or paraphrased in this manual.

AR 385-10, *The Army Safety Program.* 29 February 2000.

FM 1-02, *Operational Terms and Graphics.* 21 September 2004.

FM 3-0, *Operations*. 14 June 2001.

FM 3-90, *Tactics.* 04 July 2001.

FM 5-0, *Army Planning and Orders Production.* 20 January 2005

FM 7-0, *Training the Force. 2*2 October 2002

FM 7-1, *Battle Focused Training.* 15 September 2003

FM 7-15, *The Army Universal Task List.* 21 August 2003.

FM 34-130, *Intelligence Preparation of the Battlefield.* 08 July 1994.

DOCUMENTS NEEDED

These documents must be available to the intended users of this manual.

DA Form 2028, *Recommended Changes to Publications and Blank Forms*.

DA Form 7566, *Composite Risk Management Worksheet.*

READINGS RECOMMENDED

These documents contain relevant supplemental information.

AR 70-1, *Systems Acquisition Policy and Procedures.* 31 December 2003.

AR 385-16, *System Safety Engineering and Management.* 2 November 2001.

CSA Statement on Risk Management. 27 July 1995.

FM 3-0 (FM 100-5), *Operations.* 14 June 2000

FM 6-22.5 (FM 22-9), *Combat Stress.* 23 June 2000.

FM 22-100, *Army Leadership.* 31 August 1999 (will be revised as FM 6-22).

HQDA Letter 5-97-1, *Risk Management Integration Responsibilities.* 1 May 1997.

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Index

A

AARs, 1-4, 1-11, 1-15, 2-1

acceptability, 1-11

assess the hazards, 1-7

B

back brief, 3-14

battle drills, 1-13, 3-15

battlefield effects, 4-9

battlefield environment, 1-5, 4-9

C

C2, 4-1

catastrophic, 1-9

COA, 4-20–4-22
  development, 4-19

COA Briefing, 4-22

COA development, 4-20–4-22

command issues, 6-1

commander
  responsibilities, 2-1

commander's guidance, 4-18

confirmation brief, 3-14

control measures
  examples of, 1-11

controls, 1-10, 4-3, 4-4, 4-19
  categories of, 1-11

critical, 1-9

CRM, 1-1
  application to the MDMP, **Error! Not a valid bookmark in entry on page** 4-1
  principles, 6-2
  principles of, 1-2
  process, 1-3, 1-7
  purpose, 1-13
  the five steps of, 1-2

CRM steps, 4-3

D

DA Form 7566
  instructions, A-1

decisionmaking, 1-1

determine COAs, 4-9

develop controls and make risk decisions, 1-10

E

enemy, 3-9

evaluate, 1-15

evaluate the threat, 4-9

execution phase, 4-2

extremely high risk, 1-10

F

feasibility, 1-11

flow of information
  illustrated, 3-4

force protection, 2-1, 2-2, 5-2

FRAGO, 1-5, 3-5, 3-8, 3-9

frequent, 1-8

full-dress rehearsal, 3-15

G

G3, 4-13

G4, 4-14

G5, 4-14

G6, 4-15

H

hazard, 1-3, 1-7
  sources of, 1-5

high risk, 1-10

I

identify hazards, 1-3

implement controls, 1-13

IPB, 1-5, 4-8, 4-9

L

leader
  responsibilities, 2-2

lessons learned, 1-11, 1-15, 2-2

level of risk, 4-4, 4-5

likely, 1-8

low risk, 1-10

M

marginal, 1-9

MDMP, 3-1, **Error! Not a valid bookmark in entry on page** 4-1, 4-3
  input and output, 4-4
  steps, 4-4–4-22

MDMP steps
  illustrated, 4-3

METT-TC, 1-3, 1-5, 4-4

mission analysis, 3-8, 4-7–4-19

mission statement, 3-9

moderate risk, 1-10

movement, 3-11

O

OAKOC, 1-6

occasional, 1-8

OPORD, 3-8

overlay
  sample, 3-13, 4-7

P

parallel planning, 3-1, 3-4
phases
  of SAT, 5-1
planning phase, 4-2
POV accident
  prevention of, 6-2
preparation phase, 4-2
probability, 1-8
  levels of, 1-8

R

receipt of a mission, 4-4–4-7
reconnaissance, 3-11
reduced force rehearsal, 3-14
rehearsals, 3-15
  types of, 3-14
residual risk, 1-13
responsibility
  commander, 2-1
  S3, 2-2
  safety officer, 2-2
  Soldiers, 2-3
risk
  levels of, 1-9
risk assessment
  factors, 3-10
risk assessment matrix
  illustrated, 1-8

S

S3, 4-13
  responsibilities, 2-2
S4, 4-14
S6, 4-15
sample matrix
  air and missile defense, 4-15
  engineeer, 4-16
  fire support, 4-16
  G1/S1, 4-12
  G2/S2, 4-13
  G3/S3, 4-13
  G4/S4, 4-14
  G5/S5, 4-14
  G6/S6, 4-15
  NBC, 4-17
  surgeon/medical, 4-17
SAT, 5-1
  phases, 5-1
seldom, 1-8
severity, 1-9
  levels of, 1-9
sexual assault
  prevention of, 6-1
situational awareness, 1-14
Soldier's role, 2-3, 3-15
Soldiers
  responsibility, 2-3
staff
  responsibilities, 2-2
staff estimate
  sample, 4-8
suicide
  prevention of, 6-2
suitability, 1-11
supervise, 1-14
support rehearsal, 3-15

T

tasks
  implied, 4-9
  specified, 4-9
terrain, 1-6, 3-9, 3-10
terrain sketch
  sample, 3-14
TLP, 3-1, 3-5
TLP and MDMP
  illustrated, 3-3
TLP and risk management steps
  illustrated, 3-2
training developers
  responsibilities, 5-3
troop-leading procedures. See TLP

V

verbal order
  sample, 3-12

W

WARNO, 3-3, 3-7, 4-5, 4-19
  first, 3-3
  sample, 4-6
  second, 3-4
  third, 3-4
weather, 1-6, 3-9, 3-10
worksheet
  instruction, A-1

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