### Appendix

#### Examples of Risk Management Application

The examples in this appendix are designed to help those charged with managing risk.

### TRACKING TOOL

The work sheet instructions are in Figure A-1.

<table>
<thead>
<tr>
<th>Block</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A – D</td>
<td>Self explanatory</td>
</tr>
<tr>
<td>E</td>
<td>Identify task relating to the mission or task in Block A</td>
</tr>
<tr>
<td>F</td>
<td><strong>Identify Hazards</strong> – Identify hazards by reviewing METT-T factors for the mission or task. Additional factors include historical lessons learned, experience, judgment, equipment characteristics and warnings, and environmental considerations.</td>
</tr>
<tr>
<td>G</td>
<td><strong>Assess Hazards</strong> – Assessment 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.</td>
</tr>
<tr>
<td>H</td>
<td><strong>Develop Controls</strong> – 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.</td>
</tr>
<tr>
<td>I</td>
<td><strong>Determine Residual Risk</strong> – Determine the residual risk for each hazard by applying the risk assessment matrix (Figure 2-4). Enter the residual risk level for each hazard.</td>
</tr>
<tr>
<td>J</td>
<td><strong>Implement Controls</strong> – 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.</td>
</tr>
<tr>
<td>K</td>
<td><strong>Determine Overall Mission/Task Risk</strong> – 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.</td>
</tr>
<tr>
<td></td>
<td><strong>Supervise and Evaluate</strong> – This last step is not on the worksheet. 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.</td>
</tr>
</tbody>
</table>

*Figure A-1. Risk Management Work Sheet Instructions*
The work sheet (Figure 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.

<table>
<thead>
<tr>
<th>A. Mission or Task:</th>
<th>B. Date/Time Group Begin:</th>
<th>C. Date Prepared:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>D. Prepared By:</th>
<th>(Rank, Last Name, Duty Position)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E. Task</th>
<th>F. Identify Hazards</th>
<th>G. Assess Hazards</th>
<th>H. Develop Controls</th>
<th>I. Determine Residual Risk</th>
<th>J. Implement Controls (&quot;How To&quot;)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

K. Determine overall mission/task risk level after controls are implemented (circle one)

- LOW (L)
- MODERATE (M)
- HIGH (H)
- EXTREMELY HIGH (E)
**A. Mission or Task:** Prepare defensive positions

**B. Date/Time Group**
- **Begin:** 010035R May XX
- **End:** 010600R May XX

**C. Date Prepared:** 29 April XX

**D. Prepared By:** (Rank, Last Name, Duty Position) LT Jones, Plt Ldr

| **E. Task** | **F. Identify Hazards** | **G. Assess Hazards** | **H. Develop Controls** | **I. Determine Residual Risk** | **J. Implement Controls** | "How To"
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Construct nonstandard antivehicular wire obstacle</td>
<td>Back injuries and wire cuts during materiel offload</td>
<td>Moderate (M)</td>
<td>Use proper lift and carry methods and wear concertina wire gloves and safety goggles</td>
<td>Low (L)</td>
<td>Unit TACSOP, ARTEP 5-145 DRILL (pg 2-44) ARTEP 5-335-11-MTP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blunt trauma and cuts in pounding of U-shaped pickets</td>
<td>Moderate (M)</td>
<td>Wear helmet and increase situational awareness</td>
<td>Low (L)</td>
<td>Unit TACSOP, ARTEP 5-145 DRILL (pg 2-44) ARTEP 5-335-11-MTP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cuts when unrolling concertina</td>
<td>Moderate (M)</td>
<td>Wear concertina wire gloves and maintain situational awareness</td>
<td>Low (L)</td>
<td>Unit TACSOP, ARTEP 5-145 DRILL (pg 2-44) ARTEP 5-335-11-MTP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cuts when installing concertina</td>
<td>Moderate (M)</td>
<td>Wear concertina wire gloves and maintain situational awareness</td>
<td>Low (L)</td>
<td>Unit TACSOP, ARTEP 5-145 DRILL (pg 2-44) ARTEP 5-335-11-MTP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cuts when installing barbed wire</td>
<td>Moderate (M)</td>
<td>Wear concertina wire gloves and maintain situational awareness</td>
<td>Low (L)</td>
<td>Unit TACSOP, ARTEP 5-145 DRILL (pg 2-44) ARTEP 5-335-11-MTP</td>
<td></td>
</tr>
</tbody>
</table>

**K. Determine overall mission/task risk level after controls are implemented** (circle one)
- Low (L)
- Moderate (M)
- High (H)
- Extremely High (E)

Examples provided in Figures A-3 through A-6 should help individuals manage risk at the tactical level.
### A. Mission or Task:
Conduct a deliberate attack

### B. Date/Time Group
- **Begin:** 010035R May XX
- **End:** 010600R May XX

### C. Date Prepared:
29 April XX

### D. Prepared By:
(CPT William Wallace, Cdr)

### E. Task
Conduct obstacle breaching operations

### F. Identify Hazards
- Obstacles: High (H)
- Inexperienced soldiers: High (H)
- Operating under limited visibility: Moderate (M)
- Steep cliffs: High (H)
- Insufficient planning time: High (H)

### G. Assess Hazards
- High (H)
- High (H)
- Moderate (M)
- High (H)
- High (H)

### H. Develop Controls
- Develop and use obstacle reduction plan: Low (L)
- Additional instruction and increased supervision: Moderate (M)
- Use NVDs; use IR markers on vehicles: Low (L)
- Rehearse use of climbing ropes: Moderate (M)
- Plan and prepare concurrently: Moderate (M)

### I. Determine Residual Risk
- Low (L)
- Moderate (M)
- Low (L)
- Moderate (M)
- Moderate (M)

### J. Implement Controls
- Unit TACSOP, OPORD, training handbook
- Modified training schedule, additional instruction
- Unit TACSOP, OPORD
- FM 90-6, *Mountain Operations*
- TC 90-6-1, *Mountaineering*
- OPORD, troop-leading procedures

### K. Determine overall mission/task risk level after controls are implemented
(circle one)
- LOW (L)
- MODERATE (M)
- HIGH (H)
- EXTREMELY HIGH (E)
<table>
<thead>
<tr>
<th>A. Mission or Task:</th>
<th>Redeploy unit to home station</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Date/Time Group</td>
<td>Begin: 010035R May XX End: 010600R May XX</td>
</tr>
<tr>
<td>C. Date Prepared:</td>
<td>29 April XX</td>
</tr>
<tr>
<td>D. Prepared By: (Rank, Last Name, Duty Position)</td>
<td>MAJ Woolsey, S3</td>
</tr>
<tr>
<td>E. Task</td>
<td>F. Identify Hazards</td>
</tr>
<tr>
<td>Conduct convoy operations- movement from Grafenwohr to home base</td>
<td>Fatigue leading to poor judgment/ accident- causing errors</td>
</tr>
<tr>
<td></td>
<td>Fast moving traffic mix of cars and large trucks with trailers</td>
</tr>
<tr>
<td></td>
<td>Accidents and breakdowns blocking road</td>
</tr>
<tr>
<td>A. Mission or Task:</td>
<td>B. Date/Time Group</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Redeploy unit to home station</td>
<td><strong>Begin:</strong> 010035R Dec XX</td>
</tr>
<tr>
<td>(continued)</td>
<td><strong>End:</strong> 010600R Dec XX</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D. Prepared By:</th>
<th>MAJ Woolsey, S3</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>E. Task</th>
<th>F. Identify Hazards</th>
<th>G. Assess Hazards</th>
<th>H. Develop Controls</th>
<th>I. Determine Residual Risk</th>
<th>J. Implement Controls (“How To”)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct convoy operations—movement from Grafenwohr to home base</td>
<td>Accidents and breakdowns blocking road (continued)</td>
<td>Moderate (M)</td>
<td>2. Leaders ensure that proper maintenance are done prior to move (PMCS), dispatching and licensing procedure. 3. Contact team follows convoy and repairs or removes disabled vehicles from highway.</td>
<td>Low (L)</td>
<td>Moderate (M) Unit SOP and vehicle operations manual</td>
</tr>
<tr>
<td></td>
<td>Weather conditions— high winds, sleet, snow</td>
<td>High (H)</td>
<td></td>
<td></td>
<td>German traffic laws</td>
</tr>
<tr>
<td></td>
<td>High winds—reduction visibility, sudden reduction due to passing traffic</td>
<td>Moderate (M)</td>
<td></td>
<td></td>
<td>Moderate (M) Unit SOP and vehicle operations manual</td>
</tr>
<tr>
<td></td>
<td>20% downgrade at checkpoint 1</td>
<td>Moderate (M)</td>
<td></td>
<td></td>
<td>Low (L) Unit SOP and vehicle operations manual</td>
</tr>
<tr>
<td>A. Mission or Task:</td>
<td>B. Date/Time Group</td>
<td>C. Date Prepared:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------</td>
<td>------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Redeploy unit to home station (continued) | Begin: 010035R Dec XX  
End: 010600R Dec XX | 29 Nov XX |

**D. Prepared By:** (Rank, Last Name, Duty Position)  
MAJ Woolsey, S3

<table>
<thead>
<tr>
<th>E. Task</th>
<th>F. Identify Hazards</th>
<th>G. Assess Hazards</th>
<th>H. Develop Controls</th>
<th>I. Determine Residual Risk</th>
<th>J. Implement Controls (&quot;How To&quot;)</th>
</tr>
</thead>
</table>
| Conduct convoy operations—movement from Grafenwohr to home base | Heavy traffic, traffic jams, and congestion | Moderate (M) | 1. Use extreme caution when passing  
2. Use headlights at all times  
3. Brief convoy speeds and vehicle intervals  
4. Brief actions to take if vehicle pulls in front  
  a. Maintain clearance from vehicle  
  b. Maintain braking distance  
5. Stay in right lane in construction zones  
6. Ensure AMVs 2 or more meters wide remain in right lane  
7. Continuously scan surroundings (situational awareness) | Low (L) | Provide risk assessment to convoy leaders.  
Provide safety brief information to leaders and drivers |

**K. Determine overall mission/task risk level after controls are implemented**  
(circle one)  
LOW (L) MODERATE (M) HIGH (H) EXTREMELY HIGH (E)
### A. Mission or Task:
Peace Enforcement

### B. Date/Time Group
**Begin:** 010035R May XX  
**End:**

### C. Date Prepared:
29 April XX

### D. Prepared By:
(Rank, Last Name, Duty Position)  
G-3 Div/Corps/EAC

<table>
<thead>
<tr>
<th>E. Task</th>
<th>F. Identify Hazards</th>
<th>G. Assess Hazards</th>
<th>H. Develop Controls</th>
<th>I. Determine Residual Risk</th>
<th>J. Implement Controls (“How To”)</th>
</tr>
</thead>
</table>
| Occupy area of operations | Assault on facilities | Moderate (M) | Identify and isolate combatants, terrorists, supporters  
Harden potential terrorist targets | Low (L) | Coordination with local law enforcement agencies  
FM 5-103, *Survivability General /Order* |
| Ambush | Moderate (M) | Kevlar helmets and flak jackets required outside cantonment area  
Minimum of 4 vehicles for movement  
Two qualified drivers per vehicle | Low (L) | Rehearsals  
Immediate action drills  
General orders |
| Mines | High (H) | Countermine plan  
Mine awareness training  
Predeployment training | Moderate (M) | FM 20-32, *Mine/Countermine Operations*  
Lessons learned |
<table>
<thead>
<tr>
<th>E. Task</th>
<th>F. Identify Hazards</th>
<th>G. Assess Hazards</th>
<th>H. Develop Controls</th>
<th>I. Determine Residual Risk</th>
<th>J. Implement Controls (*&quot;How To&quot;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupy area of operations</td>
<td>Fratricide</td>
<td>Moderate (M)</td>
<td>Identify friend/foe Fratricide training LNO augmentations</td>
<td>Low (L)</td>
<td>Lessons learned ROE Weapons control procedures AOR orientation</td>
</tr>
<tr>
<td></td>
<td>Seasonal risk (cold weather injuries)</td>
<td>Moderate (M)</td>
<td>Cold weather clothing and equipment Soldier/leader awareness training</td>
<td>Low (L)</td>
<td>Severe weather alert/action plan TB Med 507</td>
</tr>
<tr>
<td></td>
<td>Seasonal risk (hot weather injuries)</td>
<td>Moderate (M)</td>
<td>Hot weather clothing and equipment Soldier/leader awareness training</td>
<td>Low (L)</td>
<td>Severe weather alert/action plan TB Med 507</td>
</tr>
<tr>
<td></td>
<td>Disease</td>
<td>Moderate (M)</td>
<td>Immunizations Field sanitation Preventive medicine</td>
<td>Low (L)</td>
<td>Spring thaw plan Focused medical training Vector control program</td>
</tr>
<tr>
<td>E. Task</td>
<td>F. Identify Hazards</td>
<td>G. Assess Hazards</td>
<td>H. Develop Controls</td>
<td>I. Determine Residual Risk</td>
<td>J. Implement Controls (<em>How To</em>)</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------</td>
<td>-------------------</td>
<td>---------------------</td>
<td>--------------------------</td>
<td>----------------------------------</td>
</tr>
</tbody>
</table>
| Occupy area of operations | Vehicle accidents | Moderate (M) | Driver qualifications  
Driver fatigue reduction  
Convoy safety procedures  
Monitor route conditions  
Vehicle inspections | Low (L) | Driver qualification training  
Driver sleep plans  
Two qualified drivers per vehicle  
Convoy safety briefings  
Route reconnaissance  
Vehicle inspections |

**K. Determine overall mission/task risk level after controls are implemented** (circle one)

- LOW (L)
- MODERATE (M)
- HIGH (H)
- EXTREMELY HIGH (E)
MISSION TRAINING PLAN

Figure A-7 shows risk management integrated into an MTP task. The example portrays a possible method for integrating the risk management process and products into MTPs. The text in bold italics indicates suggested areas in which to integrate risk management.

TASK: C² THE BATTALION (7-1-1901)(FM 7-20)
ITERATION: 1 2 3 4 5 (circle)
TRAINING STATUS: T P U (circle)
CONDITION: The brigade issues an OPORD or FRAGO

TASK STANDARD:

a. The battalion plan accomplishes the directed mission and specified tasks according to the brigade commander’s concept and intent. The plan is received and understood by the leadership of the battalion, who makes the plan successful. It is coordinated with higher, adjacent, and supporting elements.
b. The plan is as fully prepared as time allows to initiate the mission at the directed time.
c. The battalion controls and synchronizes subordinate and supporting elements so that it accomplishes the mission and preserves the force. *Include commander’s risk guidance.*
d. The battalion keeps higher, adjacent, subordinate, supporting, and supported headquarters informed of essential information key to controlling the battle or making required decisions.

SUBTASKS AND STANDARDS: GO NO-GO

+1. Battalion leaders issue the warning order.

a. A complete warning order is issued within 15 minutes of receipt of the brigade order.
b. Warning order is received by all platoons within 45 minutes of issuance of battalion warning order.

+ Critical task.
* Leader task.

Figure A-7. Integration of Risk Management into MTP Task
2. Battalion commander analyzes mission and gives initial guidance.

a. Guidance includes restated mission, which includes brigade commander’s intent for battalion and identifies all specified and implied tasks.

b. Guidance is given within 30 minutes of receipt of order.

c. Guidance includes instructions on information requirements and initially required preparation actions (movement, resupply) to start. **Guidance includes chain of command authorized to accept risk (extremely high, high, moderate, and low) affecting higher command’s intent, resources, or adjacent units’ missions.**

3. Battalion accomplishes reconnaissance and other actions to gather needed information.

a. Reconnaissance actions begin to physically gain information on the enemy and terrain as early as possible.

b. Commander conducts a personal reconnaissance, when possible. If not, the commander conducts a detailed map reconnaissance.

c. Subordinate leaders perform a personal reconnaissance when possible. See subordinate company (ARTEP 7-10-MTP) and platoon (ARTEP 7-8-MTP) T&EOs.

d. Staff coordinates with subordinate, higher, supporting, and adjacent headquarters to gather information for planning. **Staff analyzes mission to identify hazards.**

e. Staff provides operations, intelligence, and CSS estimates to include all critical METT-T factors and **risk assessment considerations (identified hazards/risks).**

4. Battalion commander develops and wargames courses of action and selects one.

**Figure A-7. Integration of Risk Management into MTP Task (continued)**

Appendix-12
a. Tactically feasible courses of action (include CS and maneuver) are made and wargamed with the available staff (commander, S3, and FSO are best for quick planning sequences; XO, S2, engineer, S4, and ADA officer). Each course of action contains assessment of hazards, risk level, and control measures identified to lower or control the risk.

b. Best COA is selected.

c. COA is wargamed and refined by the command and staff. The staff must understand the concept to produce a sound OPORD and rehearse. The staff continually assesses the situation to identify new hazards, assess the risk from each hazard, develop acceptable control measures, and reassess for residual risk to the mission. COA should pose minimum risk to soldiers, equipment, and mission accomplishment. Risk acceptance decisions for the COA are made at the appropriate level in the chain of command.

---

5. Staff develops an OPLAN and OPORD from the commander’s guidance.

OPLAN and OPORD successfully accomplish the mission according to higher commander’s intent. Hazards and risk control measures are included in the appropriate paragraphs and graphics.

---

6. Battalion commander and staff issue implementing FRAGOs (accident risk controls).

---

7. Battalion commander issues the OPORD/FRAGO.

a. OPORD/FRAGO is issued IAW the one-third, two-thirds rule and makes full use of daylight time.

b. OPORD/FRAGO accomplishes all directed missions and tasks, complies with the brigade commander’s intent, and is doctrinally sound. It is based on evaluator judgment and on comparison of brigade and battalion OPORDs.

---

Figure A-7. Integration of Risk Management into MTP Task (continued)
c. All subordinate and supporting elements receive the OPORD/FRAGO.

d. OPORD/FRAGO contains task organization, mission, concept, accident risk controls, intent for maneuver, supporting fires, and obstacles; missions and tasks for each subordinate; fire support and CSS instructions; and coordinating instructions to synchronize the efforts of maneuver forces and CS.

e. If more time is available, the battalion commander issues a fully developed OPORD (although an initial FRAGO may be issued to allow subordinates to begin preparation and followed by a full OPORD.)

f. Order is given at a location that reduces travel time, allows observation of the zone/sector, and promotes OPSEC. (Depending upon the METT-T factors, observation of the zone/sector may not be possible.)

g. Battalion commander should perform brief-backs and war gaming, to include identifying hazards and control measures, immediately after the order to improve subordinate understanding and reaction.

h. Subordinate leaders and staff should perform lateral coordination before leaving the orders site.

+8. Commander and staff coordinate and refine the plan.

a. Time is well used to continue gathering information and to improve the plan (contingency plans, hazard identification and controls, fire plans).

b. New information is disseminated and coordinated with higher, adjacent, and supporting headquarters to include—
   • Changes or refinements in plan.
   • Information on the enemy in the sector or zone.

Figure A-7. Integration of Risk Management into MTP Task (continued)
• Information that impacts on planning and execution
  *(risk acceptance decisions/hazard controls)* of
  subordinate elements.
• Adjustments/changes in the plans.

**9. Battalion executes changes in task organization.**

a. Main CP coordinates link-up location, time, and
   responsible element.

b. Attachments/new elements are received at the
   coordinated location and time; updated on current
   situation, OPORDs, and SOIs; and resupplied.

c. Detachments reach the link-up point at the time and place
   directed.

**10. Battalion performs and commander and staff perform, supervise, and monitor preparations.**

a. Command group/XO performs brief-backs with
   subordinate commanders, leaders, and key staff.

b. Main CP maintains status of preparations.

c. Elements make full use of time to prepare for the
   operation. Subjective judgment of the evaluator is
   based on the analysis of preparation charts and
   available preparation time.

**11. Battalion sees the battlefield.**

a. Command group is positioned to see and move.

b. Companies and other subordinates accurately report
   critical information on actions and changes in combat
   status within five minutes. See subordinate MTPs.

c. Main CP collects, analyzes, and passes processed critical
   information.

d. Subordinates execute intelligence collection plan. See

---

**Figure A-7. Integration of Risk Management into MTP Task** (continued)
Subordinate elements MTPs. *Subordinates integrate the risk management process when developing plans and executing tasks.*

**12.** Battalion leaders command and control the execution.

a. Subordinate elements report enemy and friendly actions, change in status, and any other factor that would require change within three minutes.

b. Battalion leaders win the battle by directing the maneuver of units, controlling direct and indirect fires, *properly integrating risk management into planning, preparation, and execution,* and directing other CS actions to cope with new METT-T/risk factors. Indicators are:

1. Elements not following OPLAN and OPORD are corrected.
2. Responses to new METT-T hazards are directed soon after the new situation occurs.
3. No friendly casualties inflicted by friendly direct or indirect fires or other accidents.
4. Number/percentage of direct fire weapons engaging the enemy.
5. Number/percentage of indirect fire rounds fired and percentage hitting/suppressing the enemy.
6. Number of enemy casualties.
7. Number of friendly casualties.

c. The C² and CSS assets are controlled to support maneuver effort. Indicators are—

1. Effective CSS and C².
2. C² or CSS elements not destroyed by enemy direct fires.

d. FRAGOs are clear, concise, *include risk management,* and are quickly executed by subordinates.

**Figure A-7. Integration of Risk Management into MTP Task**

(continued)
e. Changes that affect the battle are disseminated within five minutes.

13. Subordinate commanders, leaders, and staff laterally coordinate actions during the battle.

All battle actions requiring coordination between elements are coordinated.

14. Battalion coordinates with adjacent and supporting headquarters.

All battle actions requiring coordination with other headquarters are laterally and promptly coordinated.

15. Battalion reports.

Battalion CPs submit all critical and required reports to brigade. They report events to adjacent and supporting elements that impact on them in time for those units to react. *They advise the chain of command, as appropriate, on risks and risk-reduction measures.*

**Figure A-7. Integration of Risk Management into MTP Task (continued)**