

STAFF PROCESS

Quick Reference Series

Military Decision Making Process

Step 4 - Course of Action Analysis

(Book 4 of 5)



September 2012

The Staff Process Quick Reference Series (SPQRS) addresses scores of Mission Command topics. Each SPQRS edition is dated and numbered for reference purposes.

SPQRS - 4 - 2012

About This Book

Purpose

This publication has been developed as a tool to assist unit commanders and staffs with the fourth step of the Military Decision Making Process (MDMP), *Course of Action Analysis*.

How It's Organized

This publication is designed as a quick reference for use during the conduct of the MDMP or to “brush up” on the process before it is initiated. Organization of this book supports a simplified, checklist approach.

The *Course of Action Analysis* major task (step) is briefly described and followed by a graphic that highlights its key features. It is then separated into its supporting tasks with the following information provided: actions that must occur, typical performers of the action, results that should occur, and helpful tips to assist in task execution. A fill-in “Notes” section is provided at the end of each subtask. Selected tools to assist in task execution are also included, along with a glossary of applicable terms and acronyms.

Note From the Author

This book is not intended to be an “end all” reference tool for the MDMP. To cover every possible staff position and staff-to-topic combination would require far more detail than a reference of this nature can provide. Successful employment of this tool lies in its collaborative use with other staff members, maintaining MDMP process focus, and “checking off” critical process requirements.

It is also impossible to write observations, insights, and lessons (OIL) to fit each reader / user. Suffice it to say that you must balance your MDMP staff duties and responsibilities with those of other staff personnel. As you proceed through the tasks of each step in the MDMP, whether the commander, XO, principal or special staff, consider your support role and those of others in getting the job done. You may not have to take any action on a given task or associated observation or insight, but you should be the “eyes and ears” ensuring the right action is being taken by the right person, on the right tasks, at the right time.

About This Book (cont.)

Special Information Legend

The following icons are included throughout this publication with the purpose of soliciting reader / user attention to information ranging from “considered critical” to noteworthy observations, insights, and lessons (OIL). These are author annotations and may not coincide with reader / user opinion.



Information is considered critical to task / mission accomplishment. Requires special scrutiny to ensure successful staff collaboration and unit execution



Stop for a minute! Based on the information provided, check that how you proceed is the most effective course of action (COA).



Note the reference listed if you need subject clarification or need to know more.



Every task “Tips” section contains valuable observations, insights, and lessons.

Task Reference Legend

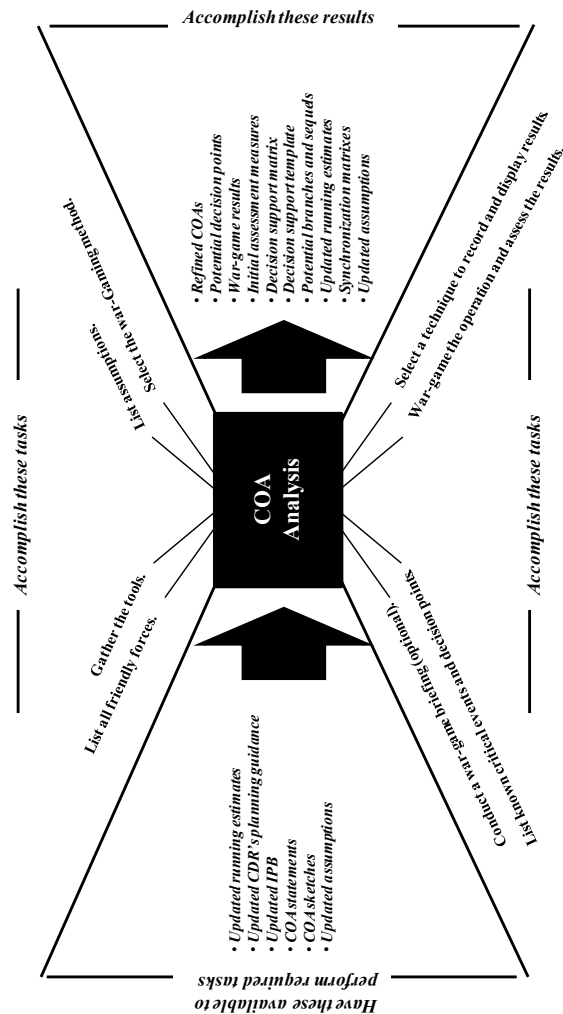
Before each step of the MDMP, a table identifying a by-task, paragraph reference to ATTP 5-0.1 has been included. While this book provides a task-by-task breakout of actions that should occur, who performs them, the results that should be achieved, and numerous observations, insights, and lessons (OIL) that will aid in task performance, it is important that a review of current doctrine (by task) be accomplished. As you proceed through the MDMP tasks that follow, use this table to quickly make that review.

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About This Book (cont.)

MDMP Step Inputs, Actions, and Outputs

Simply put . . . there are seven major steps / tasks and multiple sub-tasks. Each step is conducted in an iterative or repetitious manner, where key actions and products are needed as inputs to the tasks within each step, and performance of the tasks within each step produces key outputs . . . many of which will be needed as inputs to the succeeding MDMP step. **Note the following diagram concerning the fourth step of the MDMP, *Course of Action Analysis*.** A graphic example unique to the MDMP step being addressed precedes each MDMP step in this publication.



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Table of Contents

About This Book.....	1
Table of Contents.....	4
Introduction to the MDMP.....	7
What’s Involved?.....	8
Who Talks to Whom About What.....	9
Course of Action Analysis.....	14
<i>Task Reference Legend</i>	15
<i>Trends (Current Comments)</i>	16
<i>MDMP Step 4 Inputs, Actions, and Outputs</i>	23
<i>Getting Started</i>	24
<i>Gather the Tools</i>	27
Actions that Must Occur.....	28
Typical Performers of the Action.....	28
Results that Should Occur.....	28
Helpful Tips.....	28
<i>List All Friendly Forces</i>	31
Actions that Must Occur.....	32
Typical Performers of the Action.....	32
Results that Should Occur.....	32
Helpful Tips.....	32
<i>List Assumptions</i>	35
Actions that Must Occur.....	36
Typical Performers of the Action.....	36
Results that Should Occur.....	36
Helpful Tips.....	36

Table of Contents (cont.)

<i>List Known Critical Events and Decision Points.....</i>	39
Actions that Must Occur.....	40
Typical Performers of the Action.....	40
Results that Should Occur.....	40
Helpful Tips.....	40
<i>Select the War-Gaming Method.....</i>	43
Actions that Must Occur.....	44
Typical Performers of the Action.....	44
Results that Should Occur.....	44
Helpful Tips.....	44
<i>Select a Technique to Record and Display Results.....</i>	48
Actions that Must Occur.....	49
Typical Performers of the Action.....	49
Results that Should Occur.....	49
Helpful Tips.....	49
<i>War-Game the Operation and Assess the Results.....</i>	54
Actions that Must Occur.....	55
Typical Performers of the Action.....	55
Results that Should Occur.....	55
Helpful Tips.....	55
<i>Conduct a War-game Briefing (Optional).....</i>	65
Actions that Must Occur.....	66
Typical Performers of the Action.....	66
Results that Should Occur.....	66
Helpful Tips.....	66

Table of Contents (cont.)

Some Tools That May Help.....	69
<i>Sample Decision Support Template (DST).....</i>	<i>70</i>
<i>Sample Decision Support Matrix (DSM).....</i>	<i>70</i>
<i>Sample Decision Support Card.....</i>	<i>72</i>
<i>Belt Method Course of Action (w/Sample).....</i>	<i>73</i>
<i>Avenue in Depth Method Course of Action (w/Sample)..</i>	<i>75</i>
<i>Box Method Course of Action (w/Sample).....</i>	<i>77</i>
<i>Synchronization Matrix (w/Sample 1).....</i>	<i>79</i>
<i>Synchronization Matrix (Sample 2).....</i>	<i>81</i>
<i>Sketch Note Technique (w/Sample).....</i>	<i>85</i>
Acronyms and Abbreviations.....	87
Glossary.....	91

Introduction to the MDMP

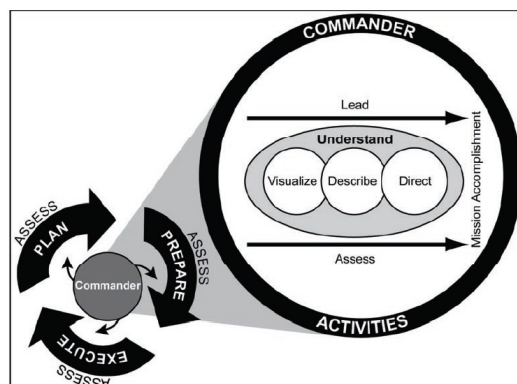
The MDMP is an iterative planning methodology that integrates the activities of the commander, staff, subordinate headquarters, and other partners to understand the situation and mission; develop and compare courses of action; decide on a course of action that best accomplishes the mission; and produce an operation plan or order for execution (ATTP 5-0.1).

The MDMP

- Helps leaders apply thoroughness, clarity, sound judgment, logic, and professional knowledge to understand situations, develop options to solve problems, and reach decisions. *ATTP 5-0.1*
- Helps commanders, staffs, and others think critically and creatively while planning. *ATTP 5-0.1*
- Facilitates collaborative planning. The higher headquarters solicits input and continuously shares information concerning future operations through planning meetings, warning orders, and other means.
- Shares information with subordinate and adjacent units, supporting and supported units, and other military and civilian partners.
- Encourages active collaboration among all organizations affected by the pending operations to build a shared understanding of the situation, participate in *COA Development* and decision making, and resolve conflicts before publishing the plan or order. *ATTP 5-0.1*
- Focuses on developing an understanding of the current situation and determining what to assess and how to assess progress using measures of effectiveness and measures of performance. *ATTP 5-0.1*

TIP

It is critical that you assist the commander in achieving a clear understanding of the operational environment.



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What's Involved?

The following MDMP table is nothing more than a “snapshot” of the process. The devil is in the details, as there are numerous tasks within each step that must be accomplished to effectively move through the process. Not all tasks within the steps of the MDMP are done sequentially. Many are done simultaneously, as will be pointed out in the explanations ahead. Consider the letter “Z” as you navigate this table. Note, this is not a mirror copy of Figure 4-1 in ATTP 5-0.1. It includes other key input and output information identified in the MDMP step sections of Chapter 4, ATTP 5-0.1.

Key inputs	Steps	Key outputs
<ul style="list-style-type: none"> Higher headquarters' plan or order or a new mission anticipated by the commander 	<p>Step 1 Receipt of Mission</p>	<ul style="list-style-type: none"> Commander's initial guidance Initial allocation of time
Warning order		
<ul style="list-style-type: none"> Higher headquarters' plan or order Higher headquarters' intelligence and knowledge products Knowledge products from other organizations Design concept (if design precedes mission analysis) Updated Running Estimates Initial commander's guidance COA evaluation criteria (from commander's initial guidance) 	<p>Step 2 Mission Analysis</p>	<ul style="list-style-type: none"> Approved problem statement Approved mission statement Initial commander's intent Initial CCIRs and EEFls Initial commander's planning guidance Information themes and messages Updated IPB and running estimates Assumptions Resource shortfalls Updated operational timeline COA evaluation criteria
Warning order		
<ul style="list-style-type: none"> Approved problem statement Approved mission statement Initial commander's intent, planning guidance, CCIR, and EEFl Updated IPB and running estimates Assumptions Design concept (if developed) Specified and implied tasks 	<p>Step 3 Course of Action (COA) Development</p>	<ul style="list-style-type: none"> COA statements and sketches <ul style="list-style-type: none"> Tentative task organization Broad concept of operations Commander's revised planning guidance to include: <ul style="list-style-type: none"> War-gaming guidance Evaluation criteria Updated running estimates and IPB products Updated assumptions
<ul style="list-style-type: none"> Updated running estimates Revised commander's planning guidance Updated IPB products COA statements and sketches Updated assumptions 	<p>Step 4 COA Analysis (War Game)</p>	<ul style="list-style-type: none"> Refined COAs Potential decision points War-game results Initial assessment measures Updated assumptions Decision support templates and matrixes Synchronization matrixes Potential branches and sequels Updated running estimates
<ul style="list-style-type: none"> Updated running estimates Refined COAs Evaluation criteria War-game results Updated assumptions 	<p>Step 5 COA Comparison</p>	<ul style="list-style-type: none"> Evaluated COAs Recommended COAs Updated running estimates Updated assumptions COA selection rationale
<ul style="list-style-type: none"> Updated running estimates Evaluated COAs Recommended COA Updated assumptions 	<p>Step 6 COA Approval</p>	<ul style="list-style-type: none"> Commander selected COA and any modifications Refined commander's intent, CCIRs, and EEFls Updated assumptions Final commander's planning guidance
Warning order		
<ul style="list-style-type: none"> Commander selected COA with any modifications Refined commander's intent, CCIRs, and EEFls Updated assumptions Commander's final planning guidance 	<p>Step 7 Orders Production</p>	<ul style="list-style-type: none"> Approved operations plan or order Schedule for rehearsals

Who Talks to Whom About What

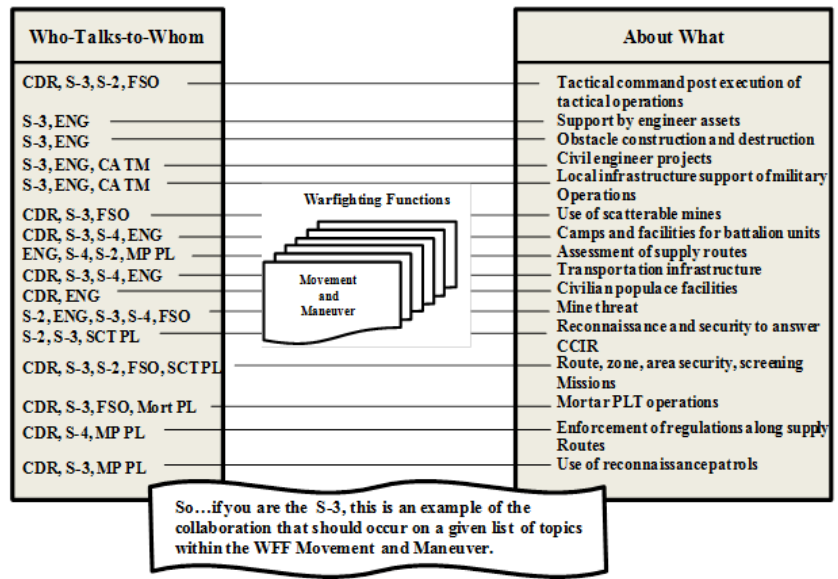
Remember the earlier comment about the “Devil is in the details?” Nowhere is this more true than knowing who to communicate with to get the right answer or product, in the right sequence or format, at the right time. Planning standard operating procedures (PSOP) and Tactical SOPs (TACSOP) should have this information . . . right? Don’t count on it.

As you train on the MDMP, check your SOPs, and find out if there are omissions in “who talks to whom about what.” For every task and product identified in the previous graphic, there are potentially a host of staff personnel interacting with one another to accomplish them.

TIPs

Identify every key staff position involved in the execution of your unit’s MDMP, and ask the question . . . within this process, “who talks to whom about what?” Correct what is wrong and add the correct answers to your SOPs.

For every “what” topic you see in the below graphic, there is also a “why.” Consider “why” a particular staff member may need to collaborate about one of the “what” topics. You may discover a need to collaborate based on another staff member’s “why.”



Who Talks to Whom About What (cont.)

Following are examples of the Executive Officer’s (XO) interaction with the unit staff organized by two of the six warfighting functions (WFF), Movement and Maneuver and Intelligence. These lists (examples only . . . units may have different requirements than those shown) can be an important tool for the XO and the staff and should be included in unit SOPs. Don’t make the mistake of thinking that the following graphics only apply to the XO. Your staff position is addressed as well. Take the time to identify where you fit within each WFF. You are grouped with other key staff, and information topics (“About What”) that you and others may need to collaborate on are identified. A complete list of collaboration topics within each WFF may be found in the MTC-LVN June 2012 edition of the *Staff Handbook*.

WFF - Movement and Maneuver



Collaboration With	About What
CDR, S-3	Shaping the area of operations (AO) and area of influence (AI)
CDR, S-3	Conditions for successful decisive operations
CDR, All Staff	Synchronization of all the elements of combat power
CDR, All Staff	Commander’s (CDR) intent and concept of operations
CDR, S-3, S-1, S-4	Combat status of all subordinate units
CDR, S-3	Integration of attached units
CDR, S-3, S-2	Support to deception, counter-deception operations
S-3	Battalion (BN) Collection Plan
CDR, S-3, CA, S-2	Scope of Civil Affairs
CDR, S-3, FSO, CA	Unit taskings and assets to accomplish effects tasks
CDR, S-3	Compatibility of other national military structures with US systems
S-3	Operational assessments
CDR, S-3	Coordination with adjacent, attached, special operations forces, host nation, and coalition units
CDR, S-3, S-4	Battalion unit movements
CDR, S-3	Providing a reserve
S-3, S-4	Mobility in the AO
FSO, S-3, S-2	Integration of lethal and non-lethal effects
CDR, S-3	Current operations
CDR, S-3, MP PL	Use of reconnaissance patrols
CDR, S-3, MP PL	Law enforcement missions
CDR, S-1, MP PL	Criminal investigations
CDR, S-3, MP PL	Crowd and riot control operations
CDR, S-3, MP PL	Area damage control
CDR, S-3, MP PL	Reaction force operations
S-3, CA TM, S-2, MP PL	Assessment of civil defense and local police
CDR, S-3, MP PL, S-2	Battalion detainee collection point
S-2, MP PL	Physical security
CDR, S-3, MP PL	Liaison with local police
CDR, S-3, MP PL	Personnel, convoy, very important person security
CDR, S-3	Assets from higher headquarters (HHQ)
CDR, S-3	Training requirements, allocation of training resources, CDR’s training guidance
CDR, S-3, S-2	Stability Operations (SO) planning
FSO, S-1, S-2, S-3, S-4	Positioning of fires units

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Who Talks to Whom About What (cont.)

WFF - Movement and Maneuver (cont.)

Collaboration With	About What
CDR, S-3, S-2, FSO	Tactical command post execution of tactical operations
S-3, ENG	Support by engineer assets
S-3, ENG	Obstacle construction and destruction
S-3, ENG, CA TM	Civil engineer projects
S-3, ENG, CA TM	Local infrastructure support of military operations
CDR, S-3, FSO	Use of scatterable mines
CDR, S-3, S-4, ENG	Camps and facilities for battalion units
ENG, S-4, S-2, MP PL	Assessment of supply routes
CDR, S-3, S-4, ENG	Transportation infrastructure
CDR, ENG	Civilian populace facilities
S-2, ENG, S-3, S-4, FSO	Mine threat
S-2, S-3, SCT PL	Reconnaissance and security to answer CCIR
CDR, S-3, S-2, FSO, SCT PL	Route, zone, area security, screening missions
CDR, S-3, FSO, Mort PL	Mortar Platoon (PLT) operations
CDR, S-4, MP PL	Enforcement of regulations along supply routes
CDR, S-3, MP PL	Use of reconnaissance patrols

WFF - Intelligence

Collaboration With	About What
CDR, S-2, CA TM, MI-SO, S-1	Perceptions of the local population, belligerent factions, and local leaders
CDR, S-2, S-1, CA TM, MISO TM, IIA	The political dimension of the operational environment
CDR, S-2, S-3, CHEMO, S-1	The physical and mental health of the command
CDR, S-3, S-2, S-1	Casualty Evacuation (CASEVAC) Plan
CDR, S-3, S-2, S-1	Medical treatment to Soldiers, detainees (to include prisoners of war), and civilians
All Staff	Input to measures of effectiveness (MOE) assessment
S-2, S-3, Fires, S-6	The brigade combat team (BCT) intelligence process
All Staff	IPB, including integration of input from other staff sections
CDR, XO, S-2, S-3	Situation development, to include updating the enemy, terrain and weather, and civil considerations portions of the common operational picture (COP)
S-2, S-3	Synchronization of intelligence support with combat and collections operations; commander's critical information requirements (CCIR) (including priority intelligence requirements [PIR] and friendly forces information requirements [FFIR]), and other information requirements (IR) to develop collection tasks and requests from higher and adjacent units
S-2, S-3	Adjustments to the Collection Plan to facilitate integration
S-2, S-3	Collection operations
S-2, BDE S-2	All-source intelligence that answers PIR
S-2, S-3, Patrol Leaders	Patrol briefings and debriefings
S-2, S-1, S-4, S-3	Oversight and support of military intelligence (MI) assets and units
S-2, S-3, Fires, CA	Pertinent demographic and economic issues

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Who Talks to Whom About What (cont.)

WFF - Intelligence (cont.)

Collaboration With	About What
<p>CDR, S-3, S-2, CA TM</p> <p>CDR, S-3, S-2, CA TM CDR, S-3, CA TM</p> <p>CDR, S-3, CA TM CDR, S-3, MP PL S-2, CI, HUMINT, S2X, THT S-2, CMO, S2X, THT, G-2</p> <p>S-2, S2X, S-6, THT CDR, S-3, S-2, THT</p> <p>S-2, S2X, THT</p>	<p>Preparation and integration of area assessments in support of civil-military operations (CMO)</p> <p>Civilian interference with military operations</p> <p>Performance of specific functions within the limits of the authority and liability established by international treaties and agreements</p> <p>Effects of the civilian population on BN operations</p> <p>Liaison with local civilian law enforcement authorities</p> <p>HUMINT Collection Plan to support the BN Collection Plan</p> <p>Coordination of human intelligence (HUMINT) and counter-intelligence (CI) activities in the BN AO with national agencies</p> <p>Technical control measures for HUMINT and CI reporting</p> <p>Operational guidance (not operational control) to HUMINT collectors and CI agents</p> <p>HUMINT and CI activities supporting battalion effects priorities</p>
<p>S-2, CA, MISO TM</p> <p>S-2, THT, CA, Patrol Debriefs</p> <p>S-2, CA, Fires, THT</p> <p>S-2, ENG</p> <p>S-2, THT, CMO, CA, Patrols</p> <p>S-2, Patrol Debriefs, G-2 S-2, Patrol Debriefs, THT S-2, Patrol Debriefs, THT S-4 S-2, S-3, CDR</p> <p>S-2, S-2 Section</p> <p>S-2, S-3, Fires</p> <p>S-2, THT, Patrols</p> <p>S-2, CA, THT, IIA</p> <p>All Staff S-2, XO, CDR, S-3 S-2, THT, CA, CMO</p>	<p>Third nation support to belligerents or other outside influences</p> <p>Indicators of continued / increased hostile activities</p> <p>Demographics that allow for encouragement, and / or discouragement of belligerent COAs</p> <p>Observation and fields of fire, avenues of approach, key terrain, obstacles and movement, cover and concealment (OAKOC) analysis</p> <p>Belligerent groups and their relationship to each other. (Political, cultural, and economic allegiances between belligerent groups)</p> <p>Leadership links between belligerent groups</p> <p>Discipline and training of belligerent groups</p> <p>Capabilities of belligerent groups</p> <p>Supporting functions associated with belligerent groups for logistics, movement and populace support</p> <p>Responses from belligerent groups to US actions</p> <p>Synchronization effort to ensure every element of the BN understands the intelligence required and plays an active role in the collection and production of that intelligence</p> <p>Nomination of collection tasks to support battalion effects collection efforts</p> <p>Threat propaganda / recruitment teams within or through the area of responsibility (AOR)</p> <p>Current situation regarding enemy and environmental factors that will impact planning and operational execution</p> <p>Maintain intelligence preparation of the battlefield (IPB)</p> <p>Intelligence production team</p> <p>Use of HUMINT</p>

Who Talks to Whom About What (cont.)

WFF - Intelligence (cont.)

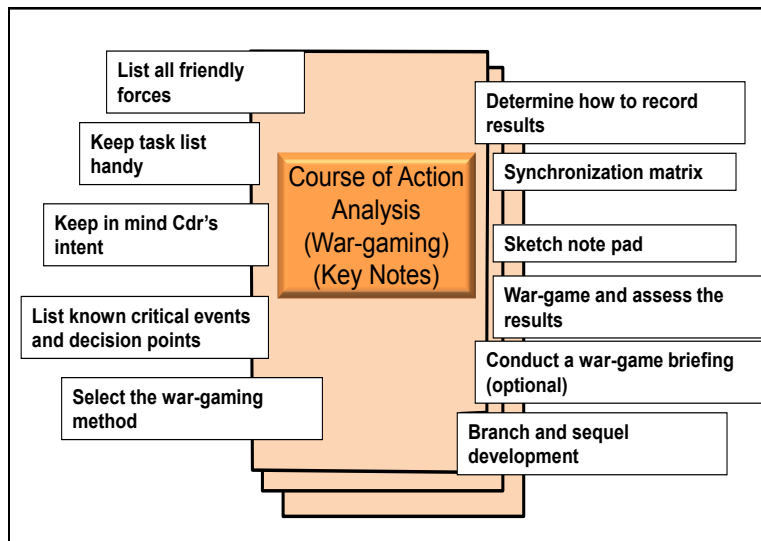
Collaboration With	About What
S-2, SSO	Release of classified US information in accordance with the multinational sharing agreements
S-2, S-3, NGO	Integration of nongovernmental organizations (NGO), international organizations, host nation (HN) / police, civilian police, and others into the intelligence process
S-2, G-2	Integration of intelligence assets from higher levels
All Staff	The BN Collection Plan
S-3, S-2	Assessment of the threat to US forces
S-3, S-2	Historic connections of other nations' involvement in the life of the host nation
S-3, S-2	Local political, social, and economic boundaries, and design of boundaries to capitalize on the administrative political boundaries of the host nation
S-4, S-3, S-2, S-1, FSO	Logistic preparation of the battlefield
S-4, S-2	Impact of operations on the local economy
S-4, S-2	Sustainment stability / capability / vulnerability input to running estimates and <i>COA Analysis</i>
S-4, S-3	The unique logistics capabilities of each member of the multinational force, if applicable
S-6, S-2	Threat force communications capability (UHF, VHF, long-range cordless phone, cell phone systems, commercial, couriers, signaling mirrors, etc.) regarding their potential impact on operations for the S-2
S-6, S-2	Mission Command Systems (MCS) vulnerability to enemy and civilian actions
FSO, S-2	BN Observation Plan
S-6, S-2, IIA, CA, MISO TM	Battle damage assessment (BDA) and MOE are integrated into intelligence estimates
ENG, S-2	Terrain visualization on the effects of terrain on friendly and enemy operations
MISO TM, CDR, S-3, XO, S-2	Military information support operations (MISO) activities in support of the battalion
MISO TM, CDR, S-2	Enemy propaganda
CDR, S-3, CA TM	Public information media under civil control
CDR, S-3, FSO, CA TM	Culturally sensitive sites and protected targets

Course of Action Analysis

COA Analysis enables commanders and staffs to identify difficulties or coordination problems, as well as probable consequences of planned actions for each COA being considered. It helps them think through the tentative plan. *COA Analysis* may require commanders and staffs to revisit parts of the COA as discrepancies arise. *COA Analysis* not only appraises the quality of each COA, but also uncovers potential execution problems, decisions, and contingencies. In addition, *COA Analysis* influences how commanders and staffs understand the problem and may require the planning process to restart. War-gaming is a disciplined process, with rules and steps that attempt to visualize the flow of the operation, given the force's strengths and dispositions, enemy's capabilities and possible COAs, impact and requirements of civilians in the AO, and other aspects of the situation. *ATTP 5-0.1*



MDMP Step 4 Highlights



Course of Action Analysis (cont.)

Task Reference Legend

The following table is designed to assist commanders and staff members with a by-task, paragraph reference to ATTP 5-0.1. As you proceed through the *Course of Action Analysis* tasks that follow, use this table to quickly make that review.

STEP 4 — Course of Action Analysis and War-Gaming...4-113 thru 4-170

General War-Gaming Rules.....4-118

War-Gaming Responsibilities.....4-119 thru 4-138

Chief of Staff (Executive Officer).....4-120

Intelligence.....4-121

Movement and Maneuver.....4-122

Fires.....4-123

Protection.....4-124

Sustainment.....4-125 thru 4-129

Mission Command.....4-130 thru 4-137

Recorders.....4-138

Course of Action Process Actions.....4-139 thru 4-170

Gather the Tools.....4-140

List All Friendly Forces.....4-141

List Assumptions.....4-142

List Known Critical Events and Decision Points.....4-143 thru 4-144

Select the War-Gaming Method.....4-145 thru 4-152

Select a Technique to Record and Display Results...4-153 thru 4-155

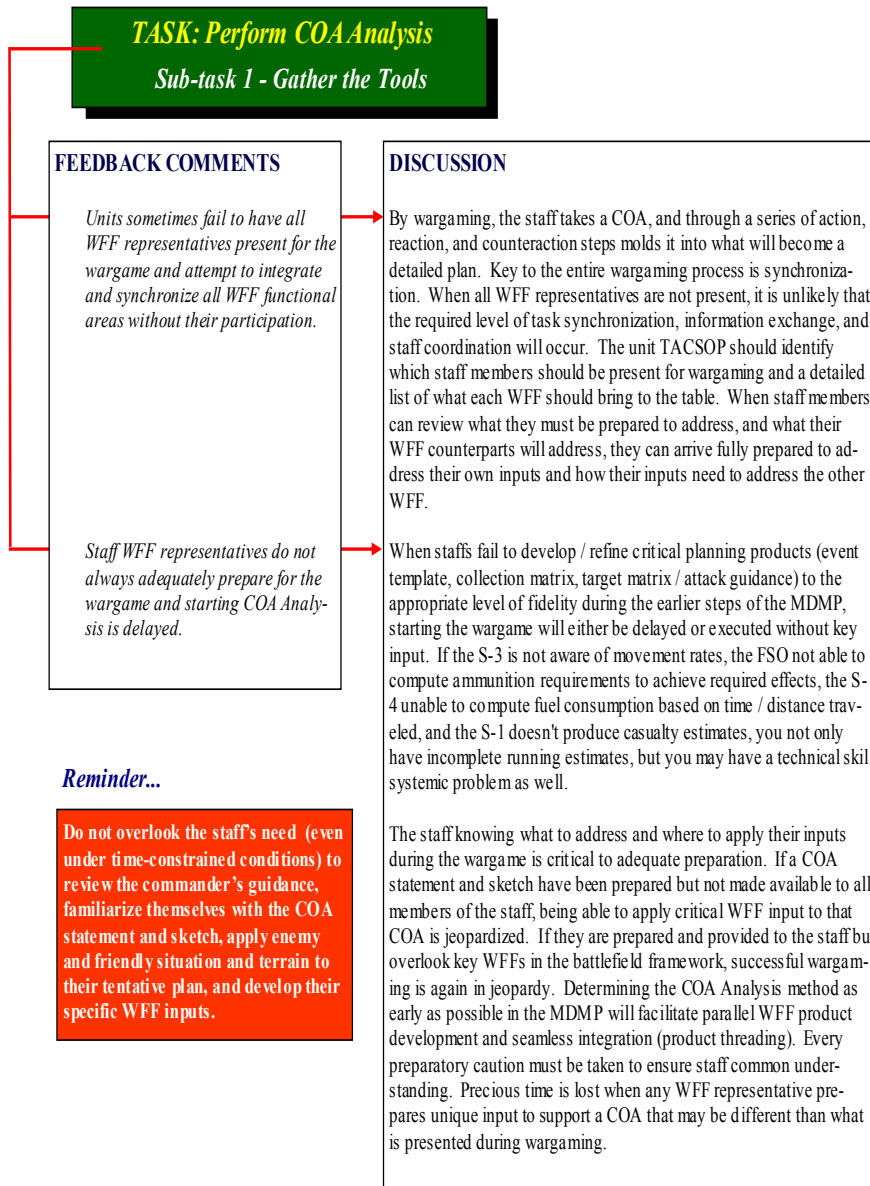
War-Game the Operation and Assess the Results.....4-156 thru 4-169

Conduct a War-game Briefing (Optional).....4-170

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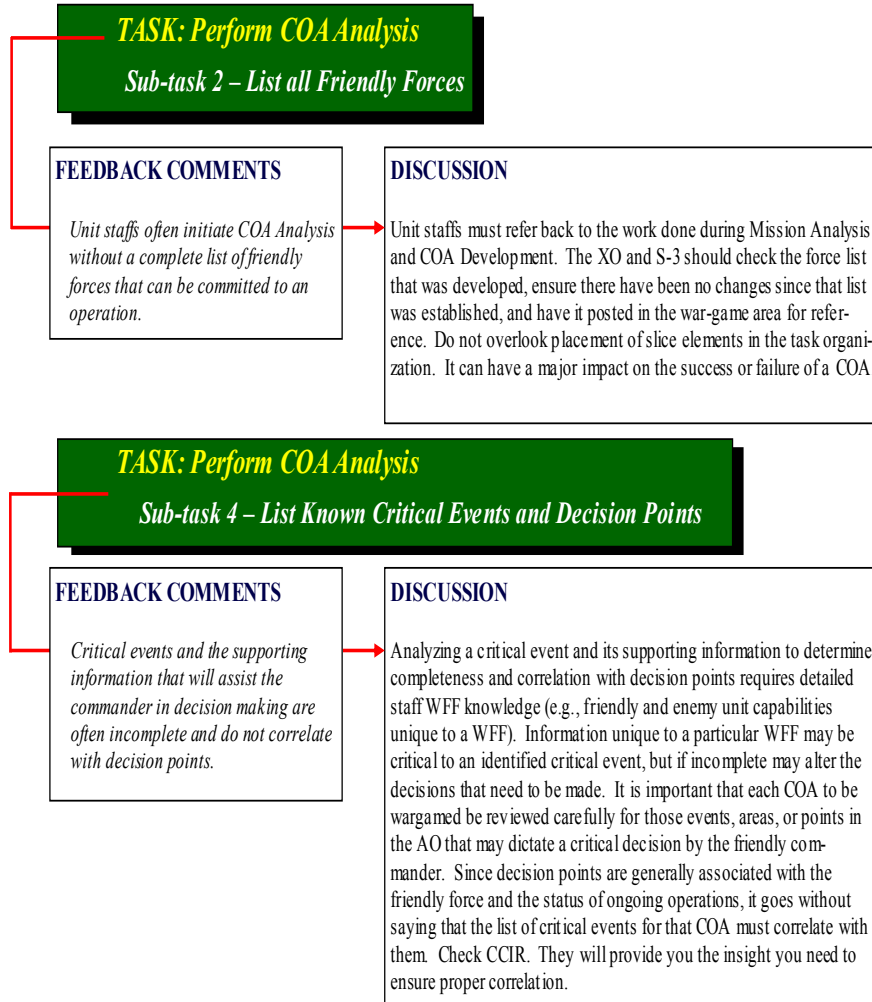
Course of Action Analysis (cont.)

Trends (Current Comments)



Course of Action Analysis (cont.)

Trends (Current Comments) (cont.)



Course of Action Analysis (cont.)

Trends (Current Comments) (cont.)

TASK: Perform COA Analysis

Sub-task 5 – Select the War-gaming Method

FEEDBACK COMMENTS

Failure of staff to define the battlefield in terms of space and time.

War-gaming methods, while detailed in ATTP 5-0.1, are not adequately addressed in the unit TACSOP. The result is incorrect application.

War-gaming methods are often incorrectly used because of incomplete COAs.

DISCUSSION

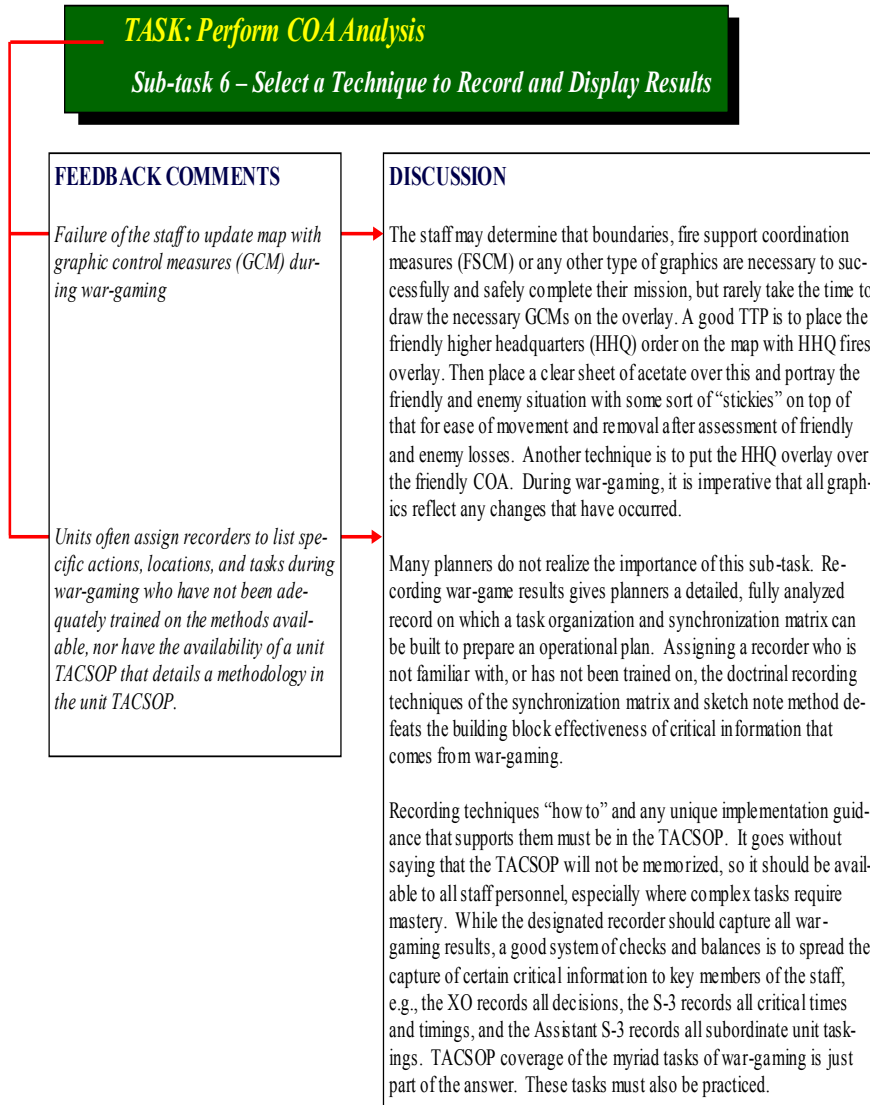
It is important to have a full appreciation for time and space on the battlefield. Unit staffs, when using the belt or avenue-in-depth method of war-gaming, often fail to do time-distance analysis as to how long movement will take (considerations of the effects of terrain, weather, night, day, etc.) and the impact on fuel consumption and logistics resupply. This is especially critical for heavy and reconnaissance forces.

Selection of a war-gaming method (box, belt, avenue-in-depth) can be problematic when a detailed understanding of the techniques does not exist. The unit TACSOP is the answer to staff execution of complex, routine planning tasks. In the case of war-gaming methods, it is particularly important. The use of one particular method may not suffice for a given operation (e.g., cordon and search) in the current operating environment and a combination of methods may be necessary. How this is done is not in doctrine, but it can and should be in the unit TACSOP. Selecting a war-gaming methodology is sometimes driven by available time and time alone. When time is critical (as it normally is) and knowing how to use war-gaming methods is discovery learning, successful plan development is unlikely.

This is another situation where the TACSOP can help. Detail the use of Feasibility, Acceptability, Distinguishability, Suitability, Completeness (FADS-C) screening criteria. If the staff prepares a COA where the decisive operation does not accomplish the mission, shaping operations do not facilitate conditions for success of the decisive operation, and sustaining operations do not enable shaping and decisive operations, the COA is certainly not complete. It is safe to assume that a case of omission this severe will not occur. However, it is a safe bet that a minor oversight in a COA may exist, and just may lead the staff to not select the most effective war-gaming methodology.

Course of Action Analysis (cont.)

Trends (Current Comments) (cont.)



Course of Action Analysis (cont.)

Trends (Current Comments) (cont.)

TASK: Perform COA Analysis
Sub-task 8 – Wargame the Operation and Assess the Results

FEEDBACK COMMENTS

Failure of the staff to integrate the S-2 (enemy role player) into war-gaming.

Even when time is available, unit staffs do not always war-game against several enemy COAs.

Event templating is a systemic weakness. Many units do not create or use an event template until late in planning and it is seldom tied to an collection plan.

War-gaming is often not focused to a point that facilitates synchronization of the battalion plan.

DISCUSSION

While staffs often use the S-2 to stimulate war-gaming, the enemy is very rarely used to its full potential. The enemy force used during the action-reaction-counteraction sequence should be used to help the staff develop branches and sequels during the war-game, reflect the ECOA you are war-gaming against, determine where logistic resupply will be needed, determine where friendly losses, and in what number, might occur, and stimulate MEDEVAC / CASEVAC planning. The use of the threat commander should be tied in with the enemy decision support matrix and the S-3 and XO's war-game plan to cause the staff to consider all aspects of the operation.

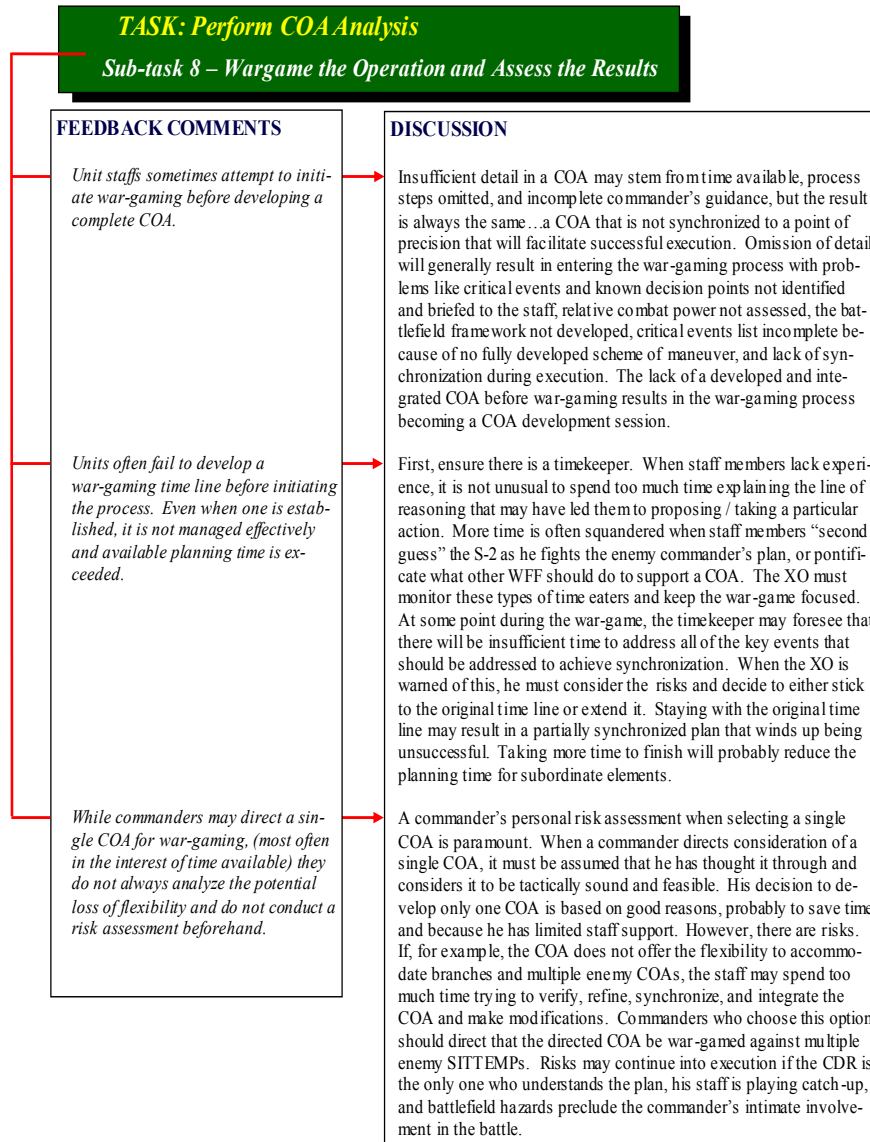
War-gaming more than one friendly COA against several enemy COAs should always be the objective of the staff, because it facilitates branches and sequels that may need to be considered. When time is short and the commander chooses to war-game only one COA, it should still be war-gamed against two or more enemy COAs, including the most likely and most dangerous. If faced with war-gaming a single COA, it is important that the COA have sufficient flexibility to address several enemy COAs. A combination of options within a single COA allows the staff to war-game each option as an event, as opposed to adding a branch at the end of the war-game session.

Continual assessment and update of the most likely and most dangerous ECOAs by the S-2 will facilitate the development of a draft event template prior to the mission analysis briefing, and thus be in place for war-gaming. Remember...the enemy event template depicts where to collect the information that will indicate which COA the enemy may have adopted. "The differences between named areas of interest (NAI), indicators, and time-phase lines (TPL) associated with each COA form the basis of the event template." FM 2-01.3

The BN XO must facilitate the war-gaming process and focus the staff on the critical events that need to be war-gamed and their relationship with the decisive point.

Course of Action Analysis (cont.)

Trends (Current Comments) (cont.)



Course of Action Analysis (cont.)

Trends (Current Comments) (cont.)

TASK: Perform COA Analysis

Sub-task 8 – Wargame the Operation and Assess the Results

FEEDBACK COMMENTS

Unit TACSOPs often fail to identify the commander's guidance for how war-gaming must be accomplished, and the results expected.

The action-reaction-counteraction war-gaming methodology is often misunderstood and inadequately applied.

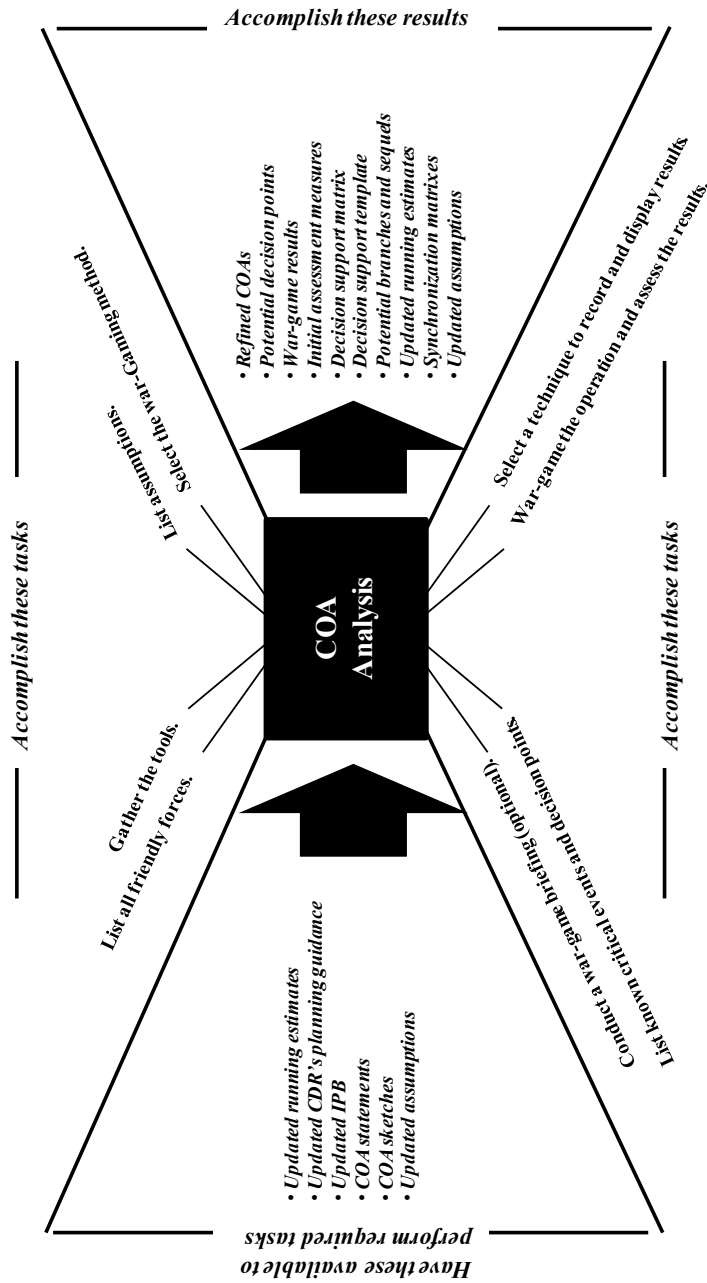
DISCUSSION

Most staff war-gaming task deficiencies can be rectified or at least reduced through the use of a detailed, up-to-date TACSOP supplemented by training and rehearsals. Capturing what the commander wants from the staff during war-gaming and what the staff can expect from the commander can and should be identified in the TACSOP. There will be those occasions where the TACSOP does not cover a situation or event, but adapting to a few changes rather than continuous discovery learning is an achievable objective. Staffs achieve synchronization during war-gaming with frequent, rigorous practice. Training facilitates staff recognition of what "right" looks like. After action reviews at the end of a training session complete the learning curve.

In addition to addressing the methodology in the TACSOP, rehearsing key roles (Enemy S-2, Maneuver S-3, Friendly S-2, FSO, Engineer, etc.) is also important. Key to the action-reaction-counteraction process is each staff member analyzing every critical event in terms of how the tasks identified within the critical event affect their WFF and what assets and actions can and should be applied. Being able to accomplish this analysis and develop the detail necessary to synchronize the plan requires that staff members be knowledgeable of their assets' capabilities and have an understanding of all the planning factors within a critical event.

Course of Action Analysis (cont.)

MDMP Step 4 Inputs, Actions, and Outputs





Course of Action Analysis (cont.)

What follows is a simplistic tool you can use to accomplish the eight sub-tasks that are performed during *Course of Action Analysis*. First, there is a brief section on “getting started.” Go through each of the preparatory considerations listed. They will get you off to a “high RPM” start to this MDMP step. Each task is then presented in four parts: the actions that must occur, the typical performers of those actions, the action results that should occur, and a check-the-box list of helpful tips.

Getting Started





Check them off as you go.

- War-gaming stimulates ideas, highlights critical tasks, and provides insights that might not otherwise be discovered. It is a critical step in the MDMP and should be allocated an appropriate amount of time. Either the XO or the commander determine how much time is available for war-gaming and ensure the time line is followed.
- Like preparing for *Course of Action (COA) Development*, there are numerous actions that must take place and tools that must be on hand to facilitate smooth execution. Following are actions and considerations that are critical to your role of preparing the staff to conduct war-gaming.
- Know why you are doing the analysis. It allows you and your staff to synchronize the WFFs for each COA and identify the one that best accomplishes the mission. Ensure the staff refers to the unit tactical standard operating procedures (TACSOP) or plans SOP (PSOP). The TACSOP / PSOP should be the source document that establishes the procedures for the conduct of war-gaming (e.g., who’s in charge, who attends, what tools should be brought, how to set up, who says what, when, and how to capture results).
- Enforce the time line once the XO and the commander have decided how much time is available.
- The XO runs the war-game. Let the commander reflect on what is developing. 
- Ensure the following:
- The staff remains objective. Don’t become fixed on a single COA. Sometimes the commander will develop a COA, and it is easy to just go with it. Remind the commander to be objective as well. 

Course of Action Analysis (cont.)

Getting Started (cont.)

Check them off as you go.

- Based on the evaluation criteria that the XO, the commander, and the S-3 have chosen, accurately record advantages and disadvantages of each COA as they emerge
- Continually assess the feasibility, acceptability, and suitability of each COA. If a COA fails any of these tests, reject it. (Note, during the war-game, all comparisons are done against evaluation and screening criteria rather than against each other)
- Avoid drawing premature conclusions and gathering facts to support such conclusions 
- Avoid comparing one COA with another during the war-game. This occurs during *COA Comparison* 
- It is critical that the S-3 and S-2 come to the war-game with a good understanding of the entire fight. Ensure that happens. 
- Check staffing levels closely. The S-2 Section, as an example, is frequently understaffed so you may want to consider augmentation during operational planning and the war-game.
- The S-3 should select the war-game method (unless the XO or the commander has a preference) and role-play the friendly commander.
- Always be on the lookout for "war stoppers." Some WFFs may not be able to support the COA. 

Notes:

Course of Action Analysis (cont.)

Task: Gather the Tools

“Task Snapshot”

COA Analysis (War-Game)

Process Tasks

- **Gather the tools**
- List all friendly forces
- List assumptions
- List known critical events and decision points
- Select the war-game method
- Select a technique to record and display results
- War-game the operation and assess the results
- Conduct a war game briefing (optional)

Tools required include, but are not limited to –

- ✓ Running estimates.
- ✓ Event templates.
- ✓ A recording method.
- ✓ Completed COAs, including graphics.
- ✓ A means to post or display enemy and friendly unit symbols and other organizations.
- ✓ A map of the AO.

Course of Action Analysis (cont.)

Task: Gather the Tools

Actions That Must Occur

Check them off as you go.

- The staff gathers the necessary tools as directed by the XO or TACSOP / PSOP.

Typical Performers of the Actions

Check as your SOP may dictate. Add where appropriate.

- XO
- Staff / Other _____

Results That Should Occur

Check them off as you go.

- Tools and references for war-gaming process.

Helpful Tips

OIL


Check them off as you go. If you don't do them, check that someone has.

- There are numerous ways to war-game. Units war-game with maps, sand tables, computer simulations, and other tools that should accurately reflect the nature of the terrain.
- Units will seldom have unlimited time to war-game. Since time wasted will always be detrimental to mission accomplishment, this first sub-task of *COA Analysis* takes on huge importance. You must prepare the staff to have the right information right the first time. (This means gathering the tools must take place concurrently with *COA Development* to ensure you are prepared for the war-game).
- Notify the staff to get ready for the war-game and remind them of their input requirements. Refer them to the TACSOP / PSOP, as it should provide the war-gaming location, assign a recorder, and dictate that the COAs identified during *COA Development* are available at the war-game site for posting on maps and Army Mission Command Systems (MCS) screens as appropriate.

Course of Action Analysis (cont.)

Helpful Tips (cont.)

Check them off as you go. If you don't do them, check that someone has.

- Each WFF representative should carefully review all COAs selected for war-gaming and identify any WFF-unique requirements that will need to be addressed. 
- The XO is key here. While the unit TACSOP / PSOP should have all the war-gaming tools listed, he must direct the staff to gather the necessary tools, materials, and data for the war-game.
- Following are sample tools for war-gaming:
 - Current running estimates
 - “Smart Books”
 - Event template
 - Recording means (*Note: Due to the amount of information, consider using two recorders so they can compare notes.*)
 - Commander’s guidance posted in the CP, so all can review
 - Completed COAs, to include maneuver, reconnaissance and surveillance, and security graphics
 - WFF specific technical information regarding the COAs
 - Doctrinal references
 - Evaluation criteria definitions
 - Complete unit “combat power” status of subordinate units
 - Means to post and display enemy and friendly unit symbols
 - Maps of the AO
 - List of CCIR
- The goal for each staff member is to be prepared to concisely state how, where, and when his asset or capability can best be applied during the war-game rather than wait for you or the S-3 to “pull” the information from them.

Notes:

Course of Action Analysis (cont.)

Task: List All Friendly Forces

“Task Snapshot”

**COA
Analysis
(War-Game)**

Process Tasks

- Gather the tools
- **List all friendly forces**
- List assumptions
- List known critical events and decision points
- Select the war-game method
- Select a technique to record and display results
- War-game the operation and assess the results
- Conduct a war game briefing (optional)

- ✓ Commander and staff consider all units that can be committed to the operation, paying special attention to support relationships and constraints.
- ✓ List includes assets from all participants operating in the AO.
- ✓ Friendly forces list remains constant for all COAs.

Course of Action Analysis (cont.)

Task: List All Friendly Forces

Actions That Must Occur

Check them off as you go.

- The staff lists all available friendly forces that can be applied to the battle.
- Commander and staff consider all units that can be committed to the operation, paying special attention to support relationships and constraints.

Typical Performers of the Actions

Check as your SOP may dictate. Add where appropriate.

- Commander
- S-3
- S-3 Section
- Staff / Other _____

Results That Should Occur


Check them off as you go.

- Initial task organization.

OIL

Helpful Tips


Check them off as you go. If you don't do them, check that someone has.

- As units are considered for commitment to the operation, *pay particular attention to support relationships and constraints.* 
- The S-3 should get the force list that was established as a result of *Mission Analysis* and *COA Development* and account for all available units.
- Ensure that what you have is the most current friendly force list available. Anything less may defeat the entire war-gaming effort.

Course of Action Analysis (cont.)

Helpful Tips (cont.)

Check them off as you go. If you don't do them, check that someone has.

- The Operations Section should place the force list in the war-game area so that it can be seen and readily used by all staff personnel.
- Work with the commander and the S-3 to make sure consideration is given to all units that can be committed to the operation.
- Keep the friendly force list constant for all COAs.* Caution here . . . if there is any doubt whether all available units are accounted for in the war-game force list, check COA Development results and make sure. 
- The Operations NCO should create icons to use during *COA Analysis*. (Rule of thumb, every element on the list two levels down and all specialty units as well as attachments get an icon to go on the chart. As you array forces you should run out as the last icon is emplaced based on the specific task organization for the COA to be war-gamed. This should be the same set of initial icons used for *COA Development*).
- Even though the staff has broken down the task organization of assets during COA Development, there are almost always going to be questions on the placement of many of the slice elements. Get ahead and be prepared to discuss those applicable elements.
- The decision graphics that you developed during COA Development (e.g., main and supporting effort), if reduced to "stickies," can be an effective map tool as you war-game different COAs.

Notes:

Course of Action Analysis (cont.)

Task: List Assumptions

“Task Snapshot”

**COA
Analysis
(War-Game)**

Process Tasks

- Gather the tools
- List all friendly forces
- **List assumptions**
- List known critical events and decision points
- Select the war-game method
- Select a technique to record and display results
- War-game the operation and assess the results
- Conduct a war game briefing (optional)

The commander and staff review previous assumptions for continued validity and necessity.

Course of Action Analysis (cont.)

Task: List Assumptions

Actions That Must Occur

Check them off as you go.

- The commander and staff list and review previous assumptions for continued validity and necessity.

Typical Performers of the Actions

Check as your SOP may dictate. Add where appropriate.

- Commander
- Staff / Other _____

Results That Should Occur

Check them off as you go.

- Revised assumptions

OIL

Helpful Tips

Check them off as you go. If you don't do them, check that someone has.

- Since making assumptions are critical to planning, the staff must be alert for change and moving from assumptions to facts.
- This is a perfunctory sub-task. Although highlighted as a separate sub-task in COA Analysis, it is, in fact, an ongoing effort throughout the planning process.
- It is incumbent to have both the commander and staff periodically review all facts and assumptions throughout the MDMP. New facts may alter requirements and require a re-analysis of the mission. Assumptions may have become facts or may have even become invalid.
- Facts and assumptions may change, and when this happens the staff must assess the impact of these changes on the plan and make the necessary adjustments, including changing the CCIR, if necessary. Reviewing and listing assumptions before initiating war-gaming is an effective "check and balance" technique to ensure previous assumptions are still valid and necessary.

Course of Action Analysis (cont.)

Helpful Tips (cont.)

Check them off as you go. If you don't do them, check that someone has.

When asking about existing assumptions, ask:
 Are they still relevant?
 Are any new ones needed?
 Is there any new information to help with validation?

By task process order, first, review all previous assumptions to see if they are still valid and necessary, need to be updated, or require new ones to be added. Then, have the staff follow this by listing all up-to-date assumptions and post in the war-game area. Finally, have the recorder prepared to capture any additional assumptions made during *COA Analysis*.

Notes:

Course of Action Analysis (cont.)

Task: List Known Critical Events and Decision Points

“Task Snapshot”

**COA
Analysis
(War-Game)**

Process Tasks

- Gather the tools
- List all friendly forces
- List assumptions
- **List known critical events and decision points**
- Select the war-game method
- Select a technique to record and display results
- War-game the operation and assess the results
- Conduct a war game briefing (optional)

A critical event is an event that directly influences mission accomplishment. Critical events include –

- ✓ Events that trigger significant actions or decisions (such as commitment of an enemy reserve).
- ✓ Complicated actions requiring detailed study (such as a passage of lines).
- ✓ Essential tasks.

The list of critical events includes major events from the unit’s current position through mission accomplishment. It includes reactions by civilians that potentially affect operations or require allocation of significant assets to account for essential stability tasks.

A decision point is a point in space and time when the commander or staff anticipates making a key decision concerning a specific course of action (JP 5-0). Decision points may be associated with –

- ✓ The friendly force.
- ✓ The status of ongoing operations.
- ✓ CCIRs that describe what information the commander needs to make the anticipated decision.

A decision point requires a decision by the commander. It does not dictate what the decision is, only that the commander must make one, and when and where it should be made to maximally impact friendly or enemy COAs or the accomplishment of stability tasks.

Course of Action Analysis (cont.)

Task: List Known Critical Events and Decision Points

Actions That Must Occur

Check them off as you go.

- The staff lists known critical events and decision points, to include: (1) events that trigger actions or decisions, (2) complicated actions requiring detailed study, and (3) essential tasks. (See Decision Support Template, Matrix, and Card Tools on pages 70-72.)

Typical Performers of the Actions

Check as your SOP may dictate. Add where appropriate.

- Staff / Other _____

Results That Should Occur

Check them off as you go.

- Critical events with corresponding decision points.

OIL

Helpful Tips

Check them off as you go. If you don't do them, check that someone has.

- The list of critical events includes major events from the unit's current position through mission accomplishment. It includes reactions by civilians that might affect operations or that will require allocation of significant assets to account for essential stability tasks.
- A decision point may be associated with CCIRs that describe what information the commander requires to make the anticipated decision.
- The PIR describes what must be known about the enemy or the environment and often is associated with a named area of interest.
- A decision point requires a decision by the commander. It does not dictate what the decision is, just that the commander must make one, and when and where it should be made to have maximum impact on friendly or enemy COAs or the accomplishment of stability tasks.
- Critical events directly influence mission accomplishment, and a decision point is when the commander will make a critical decision.

Course of Action Analysis (cont.)**Helpful Tips (cont.)**

Check them off as you go. If you don't do them, check that someone has.

- This is a critical sub-task leading up to the war-game, and it can easily become unmanageable if the list becomes too long. It is incumbent on the staff to keep the list of critical events and decision points focused. Have the S-3 list the critical events and decision points for each COA to be war-gamed.
- There are basically two major requirements: First, have the staff review each COA to be war-gamed and identify those events that may directly affect mission accomplishment. Examples would be, but are not limited to:
 - Events that trigger significant actions or decisions
 - Complicated actions requiring detailed study
 - Essential tasks identified during *Mission Analysis*
 - Major events from the unit's current position through mission accomplishment
- Each critical event has an associated time frame within which it will occur. Staff members (e.g., engineer for breach times, chemical officer for smoke buildup and duration, FSO for time required to fire FSTs) should develop timing estimates prior to war-gaming.
- Second, talk with the commander to determine where and when he will make a decision. Have the S-3 put them on a list and make it available to the staff. While it will not dictate what the decision is, it clearly delineates to the staff that a command decision will need to occur and when and where it should be made to have maximum impact on friendly or enemy COAs. Remember, decision points are generally associated with the friendly force and the status of ongoing operations. Check for the decision point's association with critical information the commander must have to make an anticipated decision . . . essentially, CCIR.
- The S-3 will know most of the critical times based on *COA Development*, but usually times will not get fully refined and synchronized until the war-game. The XO should be the honest broker in terms of judging the impacts of time estimates.

Course of Action Analysis (cont.)

Task: Select the War-game Method

“Task Snapshot”

**COA
Analysis
(War-Game)**

Process Tasks

- Gather the tools
- List all friendly forces
- List assumptions
- List known critical events and decision points
- **Select the war-game method**
- Select a technique to record and display results
- War-game the operation and assess the results
- Conduct a war game briefing (optional)

- ↓
- ✓ Belt method.
 - ✓ Box method.
 - ✓ Avenue in depth.

Course of Action Analysis (cont.)**Task: Select the War-game Method****Actions That Must Occur**

Check them off as you go.

- S-3 determines which method(s) and technique(s) will be used to analyze the COAs. (See Belt, Avenue in Depth, and Box Method Tools on pages 73-78.)
- Alternatively, the staff can develop a different technique.

Typical Performers of the Actions

Check as your SOP may dictate. Add where appropriate.

- XO
- S-3

Results That Should Occur

Check them off as you go.

- Selected war-game method or combination of methods.

OIL**Helpful Tips**

Check them off as you go. If you don't do them, check that someone has.

- War-game methods can be used separately or in combination. As you see necessary, you and the staff may also devise a method of your own.
- Refer to ATTP 5-0.1, Figures 4-6 – 4-13. They are excellent examples of the three war-gaming techniques and the two techniques commonly used to record and display results.
- War-gaming is a conscious attempt by the commander and the staff to visualize the flow of the battle, given friendly strengths and dispositions, enemy assets and possible COAs, and a set piece of ground. It attempts to foresee the action, reaction, and counteraction dynamics of an operational concept. To accomplish this end, you will need to guide the staff to employ a method that best facilitates war-gaming the operation. ATTP 5-0.1 states that "Three recommended war-gaming methods exist: belt, avenue-in-depth, and box. Each considers the area of interest and all enemy forces that can affect the outcome of the operation. Planners can use the methods separately or in combination and modified for long-term operations dominated by stability."

Course of Action Analysis (cont.)**Helpful Tips (cont.)**

Check them off as you go. If you don't do them, check that someone has.

- Like most tasks, there are a series of steps that must occur. First, confer with the S-3, and go back and review the staff's efforts from COA Development (a mission has been identified and several COAs have been developed. Several determinations have been made stemming from such things as: a generic task organization for a COA, a decisive point / result, significant events or risk associated with the operation, employment of major maneuver elements, security, the main battle, and reserve operations.) A sequential description of tasks and purposes, including the purpose and priorities for each available fire support asset, the engineer priority of effort / support, and integration of engineer assets and obstacles with maneuver and fires has also been accomplished.
- Next, the XO and the S-3 review the doctrinal requirements for the mission at hand and confirm / decide on the sequence of operations and potential critical events that will unfold. Get the commander's input and approval. Note: Even though mission requirements were closely checked during COA Development, a recheck to see how best to war-game the operation is time well spent.
- Finally, the XO and the S-3 assess war-gaming methodologies against the operational mission in the selected COA and confirm whether the selected COA should be war-gamed using one particular methodology or a mix of all three doctrinal war-gaming methods. Carefully weigh the advantages and disadvantages of each method once a selection is made.
- In stability operations, the belt method can divide the COA by events, objectives (goals, not geographic locations), or events and objectives in a selected slice across all lines of effort. It consists of war-gaming relationships among events or objectives on all lines of effort in the belt.
- In stability operations, the avenue-in-depth method can be modified. Instead of focusing on a geographic avenue, the staff war-games a line of effort. This method focuses on one line of effort at a time, beginning with the decisive line, and includes not only war-gaming events, objectives, or events and objectives in the selected line, but also war-gaming relationships among events or objectives on all lines of effort with respect to events in the selected line.

Course of Action Analysis (cont.)

Helpful Tips (cont.)

Check them off as you go. If you don't do them, check that someone has.

The XO, as the principal staff trainer, must be careful that the experience of the staff, amount of time available, and familiarity with a particular COA (if war-gaming a branch, or modification of an already-produced COA) are taken into consideration. You can ill afford for the staff to be unfamiliar with the three different methods (belt, avenue-in-depth, box).

As a minimum ensure the staff understands that:
 When using the belt method, more than one critical event may be included. It supports sequential analysis, but avoid more than three critical events within a belt at one time. It will allow you and the staff to focus on critical events throughout the depth of the area of operations. Under most circumstances, it is the preferred method

The avenue-in-depth method is good for offensive or defensive operations when in canalizing terrain that inhibits mutual support. It allows the staff to focus on one avenue of approach at a time

The box method will provide detailed analysis of a critical area. It is a good technique when time is limited and the staff needs to focus on essential tasks / events and the preferred method to war-game actions on the objective

While not a traditional war-gaming method, you may want to recommend to the commander that he war-game by critical event. In this method, the information can be better input into a synchronization matrix and the timing worked out easier than trying to do multiple events in the belt or avenue-in-depth method. Consider this as a box around each critical event that might be a subset of the belt.

Notes:

Course of Action Analysis (cont.)

Task: Select a Technique to Record and Display Results

“Task Snapshot”

**COA
Analysis
(War-Game)**

Process Tasks

- Gather the tools
- List all friendly forces
- List assumptions
- List known critical events and decision points
- Select the war-game method
- **Select a technique to record and display results**
- War-game the operation and assess the results
- Conduct a war game briefing (optional)

- ✓ Synchronization matrix technique.
- ✓ Sketch note technique.

Course of Action Analysis (cont.)**Task: Select a Technique to Record and Display Results****Actions That Must Occur**

Check them off as you go.

- S-3 determines which method will be used to record and display the results of the analysis and which staff members will be responsible for capturing the data.
- The two most common techniques are the synchronization matrix and the sketch note technique. (See Tools on pages 79-86.)

Typical Performers of the Actions

Check as your SOP may dictate. Add where appropriate.

- XO
- S-3

Results That Should Occur

Check them off as you go.

- Selected method to record and display results.

OIL**Helpful Tips**

Check them off as you go. If you don't do them, check that someone has.

- War-game results provide a record from which to build task organizations, synchronize activities, develop decision support templates, confirm and refine event templates, prepare plans or orders, and compare COAs.
- Selection and implementation of a recording method (doctrinally, there are two) is a critical sub-task in war-gaming.
- Train the staff on the two doctrinal methods used to record and display results: the synchronization matrix and the sketch note technique, and ensure they know the advantages and disadvantages of each so they can help you determine which methodology will best suit yours and the commander's needs.
- In both methods, staff members record any remarks regarding the strengths and weaknesses they discover, but you must be cautious that the amount of detail provided does not impact the time available.

Course of Action Analysis (cont.)**Helpful Tips (cont.)**

Check them off as you go. If you don't do them, check that someone has.

- Ensure that how you and the commander want things done is addressed in detail in the unit TACSOP / PSOP. The staff's ability, especially if inexperienced, to execute either method can be greatly improved if the unit SOPs details how each method is done and provides examples.
- Review war-gaming procedures with the S-3, so that both of you can work closely with the staff during each warfighting turn. Before you get started, double check the COA selected for war-gaming. Then, confirm each critical event, sub-event, and associated times.
- The synchronization matrix is a tool the staff uses to record the results of war-gaming and to help them synchronize a COA across time, space, and purpose in relationship to potential enemy and civil actions.
- Use synchronization matrix job aids so that each critical event and applicable sub-event are addressed by WFF with supporting activities, unit elements, and tasks. As each war-gaming turn is taken, the commander and staff can consider these or similarly-detailed critical event lists / aids to explore each COA and arrive at the required level of synchronization.
- As the war-gaming of a critical event unfolds, the recorder notes specific actions, locations, and tasks. His notes are then recorded on a war-game worksheet, terrain sketch, execution matrix, or synchronization matrix.
- Provide a blank copy of the synchronization matrix to all war-game participants to help their participation preparation. If the staff members fill out a sticky note or portion of the synchronization matrix for the critical event prior to being called upon, the process will become faster with fewer transition or interpretation mistakes.
- Next, monitor how the staff uses the information that has been collected and that the completed synchronization matrix clearly portrays the COA across time and space in relation to the enemy COA. Remember, the matrix is developed around selected functional areas or major subordinate commands of the unit. Other operations, functions, and units that are to be integrated may also need to be incorporated into the matrix. As the synchronization matrix supports synchroniza-

Course of Action Analysis (cont.)**Helpful Tips (cont.)**

Check them off as you go. If you don't do them, check that someone has. tion of a COA across time and space in relation to a enemy COA, it captures the relationship by relating / comparing the time or phase of an operation with the most likely enemy action and the decision point for the friendly COA.



Have the staff, at a minimum, capture "task and purpose" in each block of the synchronization matrix. Refer to the "task and purpose" used to array forces during *COA Development*. Try and capture "desired effect" as well. It will facilitate understanding during execution.



If the sketch note method is selected, monitor note taking. Have the staff use brief notes addressing critical locations or tasks. Their notations should reference specific locations on the map or relate to general considerations covering broad areas. *Note: organization can be a problem, so to facilitate understanding, have the staff use sequence numbers to reference their notes to the corresponding location on the map or overlay.* Actions may also be placed in sequential action groups with each sub-task highlighted by a separate number. The primary objective of the sketch note worksheet is to identify all pertinent data for an event. The sketch note method is particularly good for stability operations and when developing battle drills.



Note that while the sketch note method is a good technique to facilitate COA synchronization during war-gaming, it is historically not used by commanders and staffs as much as the synchronization matrix.



Use a war-game work sheet (sketch note method) to identify all pertinent data for a critical event. Assign each event a number and title and use the columns of the worksheet to identify and list in sequence:



Units and assigned tasks



Expected enemy actions and reactions



Friendly counteractions and assets



Total assets needed for the task



Estimated time to accomplish the task



The decision point tied to executing the task



CCIR



Control measures

Course of Action Analysis (cont.)

Helpful Tips (cont.)

Check them off as you go. If you don't do them, check that someone has.

Remarks (Note: stability operations that depend on a strict timing sequence may be better suited to the sketch note technique.)

Both the synchronization matrix and the sketch note worksheet recording techniques contribute to the development and use of unit battle drills. Some battle drills may support a given event unchanged, and some may need to be refined for use based on information synchronization for a COA.

If you are digital, use a single recorder and integrate laptops by WFF on a large screen matrix. This can be distracting and should not be projected all the time but is useful to review the turn following completion of a critical event.

Having scribes by WFF armed with paper, pencil, 3x5 cards, and sticky notes is always effective. Ensure your scribes understand military language and can recognize the proper formatting of grid coordinates.

Remember, how COA synchronization is recorded can make or break successful war-gaming. There must be a definitive, well-designed, and commonly-understood technique for gathering staff war-game input, and using it to determine the viability of a given COA. Available time, fatigue, staff experience, and the fog of battle dictate commonly understood execution processes (battle drills), and the technique employed for war-gaming is a primary catalyst for determining what they need to be.

Notes:

Course of Action Analysis (cont.)

Task: War-game the Operation and Assess the Results

“Task Snapshot”

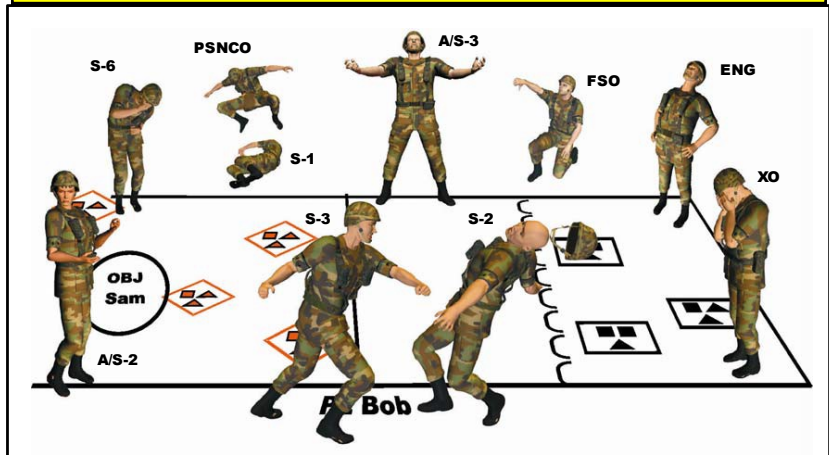
**COA
Analysis
(War-Game)**

Process Tasks

- Gather the tools
- List all friendly forces
- List assumptions
- List known critical events and decision points
- Select the war-game method
- Select a technique to record and display results
- **War-game the operation and assess the results**
- Conduct a war game briefing (optional)

War-gaming is a conscious attempt to visualize the flow of operations given the friendly force’s strengths and disposition, enemy’s capabilities and possible COAs, and civilians.

War-gaming: The Thrill of Victory / The Agony of Defeat



Cartoon courtesy of LTC (R) Neil A Garra, S2Company.com

Course of Action Analysis (cont.)

Task: War-game the Operation and Assess the Results

Actions That Must Occur

Check them off as you go.

- Task actions are covered in detail in “Helpful Tips.” (See below.)

Typical Performers of the Actions

Check as your SOP may dictate. Add where appropriate.

- Commander
- Staff / Other _____

Results That Should Occur

Check them off as you go.

- War-game results are identified in “Helpful Tips.” (See below.)

Helpful Tips

OIL

Check them off as you go. If you don’t do them, check that someone has.

- During war-gaming, the XO is the catalyst to ensure the commander and staff can foresee the battle’s action, reaction, and counteraction dynamics. He must have the staff analyze each selected event, identify tasks that the unit must accomplish one echelon down, using assets two echelons down, identify each COA’s strengths and weaknesses, and adjust as necessary.
- All that has been done during the previous six sub-tasks has been preparatory for the war-game itself. War-gaming is a process whereby the staff visualizes the execution of each friendly COA in relation to established enemy COAs using an action-reaction-counteraction methodology. Sounds simple enough, but it is complex when viewing the enormity of WFF considerations that must be taken into account, the exploration of a plan’s possible branches and sequels, and the importance of the results.
- The war-game focuses not so much on the tools used but on the staff members that participate. They should be those who are deeply involved in developing COAs. Following are the responsibilities of key staff members during war-gaming:
Refer to them as you review the war-game process. Also review the

Course of Action Analysis (cont.)

Helpful Tips (cont.)

Check them off as you go. If you don't do them, check that someone has.

extensive warfighting function collaboration list provided earlier in this document.

- _____
- _____
- _____
- _____

XO – The XO coordinates all staff actions and serves as the referee providing on the spot arbitration between the friendly and enemy commander during the war-game. He is also responsible for ensuring the staff stays on time and on track during the process. Ultimately he, with input from the commander, determines which events will be war-gamed in a time constrained environment ensuring that the decisive operation is always assessed

S-2 – The S-2 plays two roles during the war-game. First, he provides input as the friendly intelligence officer identifying IR, refining the SITTEMP and EVENTEMP, to include the NAIs, continues to participate in the targeting process through the refinement of high-value targets (HVT) and their subsequent delineation as high-payoff targets (HPT), and recommends PIR that correspond to decision points. Second, he role-plays the non-compliant enemy commander by developing decision points based on his SITTEMP and projecting enemy reactions to friendly actions. He projects both enemy losses based on the friendly maneuver plan and also adjudicates friendly casualties to stress the friendly CASEVAC and maintenance recovery systems. (In order to lessen the load for the S-2, consider using the assistant S-2 in one of these roles . . . if experienced enough.) Note, the S-2 is a tool for friendly staff planning and is not supposed to win. However, certain realistic enemy reactions may cause branches or sequels to be developed or may prove to make the COA fail the FADS-C test. The S-2 needs to ensure he uses the same set of enemy reactions (based on friendly maneuver) for each COA in order to not skew the results of war-gaming. This doesn't mean the S-2 does the same thing all the time. If necessary, he should exploit vulnerabilities in the blue plan to drive changes in maneuver

S-3 – The S-3 generally selects the technique for war-gaming and role plays the friendly commander. He will be assisted by other staff members such as the aviation officer and engineer. He must ensure the war-game covers every operational aspect of the mission

Fires – The chief of fires (FSO) assesses the fire support feasibility of each COA. He will develop the fire support matrix and measures of effectiveness. He develops an HPTL, target selection standards, and attack guidance matrix. He identifies NAIs, TAIs, HVTs, HPTs, and additional events which may lead to positioning of assets

Course of Action Analysis (cont.)

Helpful Tips (cont.)

Check them off as you go. If you don't do them, check that someone has.

— Protection – The chief of protection or protection representative for the staff advises the commander on matters involving security, personnel recovery, air and missile defense, CBRN operations, and force protection issues. He will assess MP operations and their role in supporting freedom of maneuver / movement, as well as security of ground lines of communications (GLOCS), operational law enforcement, and operational internment and resettlement operations

— Sustainment – The S-1 assesses the personnel aspect of building and maintaining the combat power of units. He also should point out the personnel shortfalls and estimates potential losses based on enemy reactions. His primary responsibility, with the Surgeon Section, is to develop a CASEVAC Plan (not a list of personnel recovery assets) and ensure it is tested during war-gaming. The S-4 assesses the logistics feasibility of each COA. He determines critical requirements, problems, and deficiencies. He determines if there is additional support required for civilians and develops sustainment triggers to assist in re-supplying the force

— Mission Command – The S-6 assesses network operations, electromagnetic spectrum operations, and network defense and information protection. He determines communication requirements based on his analysis of systems and terrain. The S-7 assesses how effectively the operation reflects the inform and influence messages and themes. He assesses the effectiveness of media and how information and themes impact various audiences both in and outside the AO. The S-9 ensures each COA integrates civil considerations in, not only tactical, but also sustainment issues. The civil affairs officer (or commander designee) represents the other actors' points of view if they are not available for the war-game. The SJA advises the commander on all matters pertaining to law, policy, regulations, and good order and discipline. He provides legal advice across the range of military operations

○ The XO should get together with the S-3 to discuss the flow of the war-game. It is important that it have a definite structure, that the structure is available for all to see in the unit SOP, and that all staff participants understand it. **Consider the following process as a way to war-game:**

— First, you select the critical events to be war-gamed, generally not more than five. (Note: This does not mean you can't do fewer or more than five, just that available time and fatigue will influence what is manageable.)

Course of Action Analysis (cont.)

Helpful Tips (cont.)

Check them off as you go. If you don't do them, check that someone has.

Typical events in a deliberate attack are the approach, establishing the support by fire, the breach, the assault, actions on the objective, and the enemy counterattack. For a defense, events might include the security zone fight, the forward security element / advanced guard main body fight, the main effort fight, the repositioning plan, and the commitment of the reserve. Your first critical event in any environment should be the initial set. This sets the stage for the upcoming operation and positions critical assets. From this position, especially during war-gaming of stability operations, you may find there are few changes to many of the subordinate units

Second, consider the situation a kinetic environment and:

Have the force with the initiative, the attacker, begin the first turn of the war-game with the appropriate action, e.g., when conducting a movement to contact, the friendly force has the initiative

If the attacking element is friendly, the S-2 will begin by briefing the enemy SITTEMP, and the S-3 will address the reconnaissance effort and describe the maneuver action. He describes the action for the event in detail from start to finish, states the task and purpose, how the units relate to each other on the battlefield, the timing involved in movement, and other significant aspects of the battle. (While the S-3 may not relate the event in time increments, ensure that he presents the event in a logical sequence from start to finish.). A security patrol or combat logistics patrol in a stability environment that comes under attack should not be considered the attacker. The action should be the attack on the convoy, the reaction should come from blue forces, and the counteraction should come from the enemy

Third, the defender responds to the action sequence with reactions by WFF. The designated enemy representative is first and addresses enemy maneuver. He is followed by the other applicable WFF. Again, the focus is on a logical visualization of the action with the reaction addressing each one of the friendly force's actions.

(Example: If the S-3 described a friendly element's occupation of a support-by-fire (SBF) position vicinity XX, the S-2 should address the enemy's indirect fires on the friendly element as part of the reaction.)

Fourth, the attacker then addresses counteractions beginning with maneuver. (Example: The S-3 addresses maneuver counteractions and is followed by individual staff members addressing their particular WFF. Referring back to the aforementioned SBF, the S-3 states that

Course of Action Analysis (cont.)**Helpful Tips (cont.)**

Check them off as you go. If you don't do them, check that someone has.

the friendly element repositions to vicinity XX to lessen the effects of enemy indirect fires while maintaining effective suppression. The FSO then states that critical friendly zone is activated when the first vehicle from the friendly element arrives at the SBF position.)

Fifth, you must carefully review the turn. Ensure all synchronization matrix entries have been made. Ensure that all issues, required coordination tasks, specified tasks, and as applicable, evaluation criteria advantages and disadvantages are recorded. Note any task organization changes, and have them recorded

Sixth, at the end of the critical event, you should recap the end state of the event (e.g., did friendly and enemy forces achieve their task and purpose for the event? What were the friendly and enemy losses? How are each arrayed at the end of the war-game event?). You should also review the event against the key tasks of the commander's intent. It is easy for subtle changes to occur, so review the COA with the staff to see if it still passes the FADS-C criteria test. Record the strengths and weaknesses of the COA against the evaluation criteria. This will greatly assist you in completing COA comparison

Finally, just as you should have done at the beginning of war-gaming, refer to ATTP 5-0.1, Figure 4-5, and review the results and products that should have been accomplished. (Have them in the unit TACSOP / PSOP for easy accessibility. Appropriate war-gaming "how to" should also be there.) Check them off. Was each accomplished? Have the S-3 post the expected results from war-gaming in the war-gaming area for all participants to see

**Also, consider the following:**

Stress to the staff that all war-game results are achieved by an integrated and synchronized staff effort. Review a result to make your point. It will clearly show that nothing is accomplished by any one staff member

Refer to the fold-outs of the First Quarter FY 2013 edition of *The Azimuth*. It offers "tips," techniques, and procedures that have been aligned with the war-gaming results and products identified in ATTP 5-0.1, and are presented in a checklist format to assist unit staffs with this critical task

Designate a recorder prior to the start of war-gaming. He should have been involved in *COA Development*. Consider an additional recorder to record issues

Course of Action Analysis (cont.)**Helpful Tips (cont.)**

Check them off as you go. If you don't do them, check that someone has.

- Know the bottom line. You and the staff are working together to develop a synchronized / shared vision of the fight
- When time is limited and there is doubt that sufficient time can be applied to war-gaming, starting on the objective may be the best sequence to pursue. This situation is more apt to occur in the current OE than in an offensive / defensive environment, where movement to an objective and associated activities and time requirements will probably affect resulting actions on the objective. Try and allot a specific amount of time for each event.
- After a full iteration of action / reaction / counteraction, you should ask if any staff member has other actions to synchronize for the battle period. This is a good time for you to ask, "Can anyone else contribute to the fight during this event?"
- Recording the results of the war-game is fraught with potential pitfalls. Staffs can find themselves falling into the trap of simply filling out blocks in the synchronization matrix rather than visualizing the fight. The synchronization matrix must not become the focus of the war-game. It must be viewed as a valuable staff tool to assist in visualizing the battle.
- Compare the finished synchronization matrix with current operations overlays to ensure proper control measures are portrayed.
- Other war-gaming actions that you should take include:
 - Adding "triggers" to specific actions recorded on your synchronization matrix to ensure they are executed at the proper time and place
 - Being prepared to go back if you and the staff fail to gain sufficient clarity of an event to warrant it
 - Advising the staff to always think . . . "What if we are successful?" . . . "What if we are not?"
 - Ensuring the staff considers all possible forces, including templated forces outside the AO that can influence the operation
 - Having the staff continuously look for ways to create conditions for success, protect the force, and shape the battlefield
 - Continuously pursuing risk management. Have every WFF perform a risk assessment for each COA and propose controls

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Course of Action Analysis (cont.)

Helpful Tips (cont.)

Check them off as you go. If you don't do them, check that someone has.

- Not overlooking the WFF assets needed to synchronize sustainment operations
- Always maintain tactical flexibility, if you can. You may need, as an example, to brief the commander that withholding some of the unit's assets for unforeseen tasks or opportunities is necessary
- Making sure you validate the composition and location of the decisive operation, shaping operations, and the reserve if the commander requires changes
- Having the staff " earmark " the commander's input with yellow "stickies." The recorder should post them to the synchronization matrix
- Looking for situations, opportunities, or additional critical events that you believe should be analyzed further
- Always seeking to retain or regain the initiative. Look for ways to take the enemy force out of what appears to be their most likely COA
- Entering graphic control measures on the operations overlay when they are talked about, e.g., if the staff talks about establishing a re-trans site, mark it on the overlay. When the staff talks about an ammunition exchange point, mark it. At the same time when the re-trans site or ammunition exchange point is discussed, ensure the appropriate staff member gives the 8-digit grid coordinate for emplacement. When the staff talks about an infiltration route, mark it along with the passage point and release points. Even though a war-game briefing may not need to be done for the commander, it is a very effective technique to ensure all members of the staff understand the results of the war-game before presenting the commander with the COA decision briefing
- Ensure the staff is familiar with the results listed in ATTP 5-0.1, Paragraphs 4-165-169. Develop a checklist matrix to judge the effectiveness of your war-gaming efforts. Use the following actions as a checklist:
 - Refinement or modification of:**
 - Each COA including identifying branches and sequels that become on-order or be-prepared missions
 - Locations and times of decisive points
 - Threat event template and matrix

Course of Action Analysis (cont.)

Helpful Tips (cont.)

Check them off as you go. If you don't do them, check that someone has.

- Task organization, including forces retained in general support
- Mission Command requirements, including control measures and updated operational graphics
- CCIR and IR, including the LTIOV, and incorporating them into the Collection Plan and information management plans
- Identification of:**
- Key or decisive terrain and determining how to use it
- Tasks the unit retains and tasks assigned to subordinates
- Likely times and areas for enemy use of weapons of mass destruction and friendly chemical, biological, radiological, and nuclear defense requirements
- Potential times or locations for committing the reserve
- The most dangerous enemy COA
- The most dangerous civilian reaction
- Locations for the commander, command posts, and INFOSYS nodes
- Critical events
- Requirements for support of each WFF
- Effects of friendly and enemy actions, along with second and third order effects, on civilians and infrastructure, and how these will affect military operations
- Or confirming the locations of named areas of interest, target areas of interest, decision points, and the IRs needed to support them
- Analyzing and evaluating the strengths and weaknesses of each COA Hazards, assessing their risk, developing controls for them, and determining residual risks
- Coordination required for integrating and synchronizing interagency, host nation, and non-governmental organization involvement
- Analysis of:**
- Potential civilian reactions to operations
- Potential media reactions to operations
- Potential impacts on civil security, civil control, and essential services in the AO

Course of Action Analysis (cont.)

Helpful Tips (cont.)

Check them off as you go. If you don't do them, check that someone has.

Development of:

- Decision points
- A synchronization matrix
- A decision support template and matrix
- Solutions to achieving minimum essential stability tasks in the AO.
- The Collection Plan and graphics
- Or refinement to inform and influence activity themes and messages
- Fires, protection, and sustainment plans, and graphic control measures

Commander and staff:

- Determining requirements for military deception and surprise
- Determining the timing for concentrating forces and starting the attack or counterattack
- Determining movement times and tables for critical assets, including information systems (INFOSYS) nodes
- Estimating the duration of the entire operation and each critical event
- Projecting the percentage of enemy forces defeated and remaining in each critical event and overall
- Projecting the percentage of minimum essential tasks that the unit can accomplish
- Anticipating media coverage and impact on key audiences
- Integrating targeting into the operation, to include identifying or confirming high-payoff targets and establishing attack guidance
- Allocating assets to subordinate commanders to accomplish their missions
- If there is time, go back and war-game from each decision point, but make a "different" decision to develop branches and sequels.

Notes:

Course of Action Analysis (cont.)

Task: Conduct a War-game Briefing (Optional)

“Task Snapshot”

COA Analysis (War-Game)

Process Tasks

- Gather the tools
- List all friendly forces
- List assumptions
- List known critical events and decision points
- Select the war-game method
- Select a technique to record and display results
- War-game the operation and assess the results
- **Conduct a war game briefing (optional)**

A wargame briefing format includes the following:

- ✓ Higher headquarters’ mission, commander’s intent, military deception plan.
- ✓ Updated IPB.
- ✓ Friendly and enemy COAs that were wargamed, including –
 - ✓ Critical events.
 - ✓ Possible enemy actions and reactions.
 - ✓ Possible impact on civilians.
 - ✓ Possible media impact.
 - ✓ Modifications to the COAs.
 - ✓ Strengths and weaknesses.
 - ✓ Results of the wargame.
- ✓ Assumptions.
- ✓ Wargame technique used.

Course of Action Analysis (cont.)

Task: Conduct a War-game Briefing (Optional)

Actions That Must Occur

Check them off as you go.

- The staff delivers a briefing (optional) to all affected elements to ensure everyone understands the results of the war-game.
- The commander modifies, updates, and approves CCIR.
- Staff revises their respective running estimates.

Typical Performers of the Actions

Check as your SOP may dictate. Add where appropriate.

- Commander
- Staff / Other _____

Results That Should Occur

Check them off as you go.

- War-game briefing.
- Results of war-game.
- Commander-approved CCIR.
- Revised running estimates.

OIL

Helpful Tips

Check them off as you go. If you don't do them, check that someone has.

- The staff uses the optional war-game briefing for review and ensures that all relevant points of the war-game are captured for presentation to the commander or XO. Note: In a collaborative environment, the briefing may include selected subordinate unit staff representatives.
- The briefing format includes:
 - ____ HHQ mission, commander's intent, and Military Deception Plan
 - ____ Updated IPB

Course of Action Analysis (cont.)

Helpful Tips (cont.)

Check them off as you go. If you don't do them, check that someone has.

- Friendly and enemy COAs that were war-gamed, to include:
- Critical events
- Possible enemy actions and reactions
- Possible impact on civilians
- Possible media impacts
- Modifications to the COAs
- Strengths and weaknesses
- Results of the war-game
- Assumptions
- War-gaming technique used

Notes:

Course of Action Analysis (cont.)

Some Tools That May Help

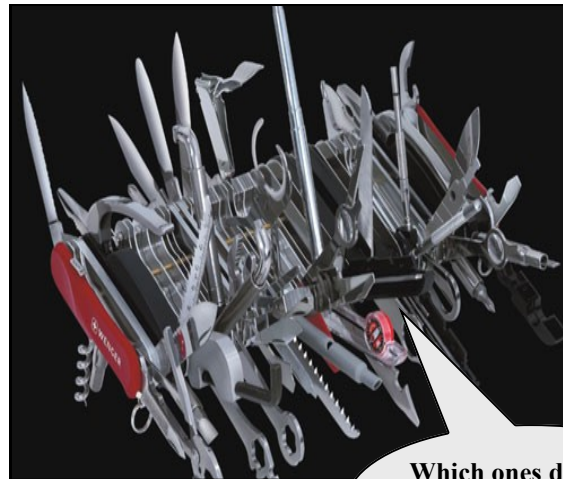
As indicated by the exaggerated graphic below, many processes require a multitude of tools to achieve a successful end state. The MDMP is no different. This publication on *Course of Action Analysis* only has the space to provide a few key ones.

However, two editions of *The Azimuth*, July 2012 and First Quarter FY 2013, will provide a broad array of tools developed by training teams and “borrowed” from open sources within the training community. Each has been reviewed, updated with current doctrine, and been broken down, in many cases, into step-by-step procedures.

There are numerous tools that are available to assist with the *Course of Action Analysis*. Two of the most useful are the Decision Support Matrix and the Synchronization Matrix, which have been included in this book.

TIP

The creation and use of planning tools separates successful staffs from staffs that struggle with processes.

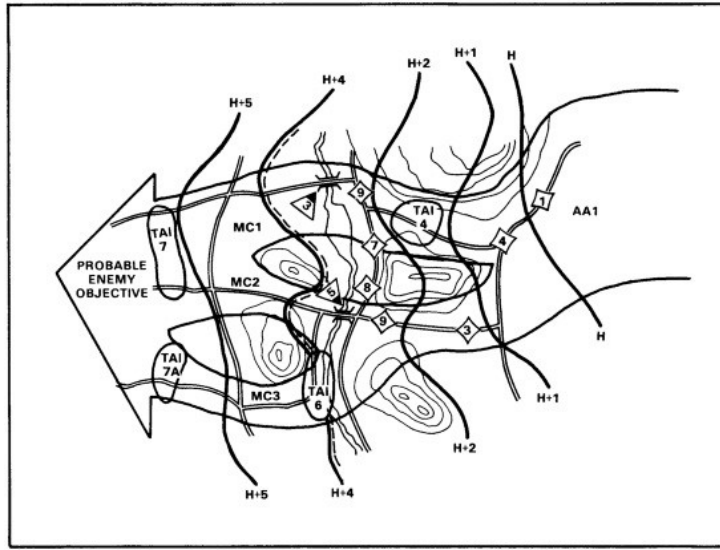


Which ones do I need? Which ones will work for me?

Course of Action Analysis (cont.)

Some Tools That May Help

Sample Decision Support Template (DST)



Sample Decision Support Matrix (DSM)

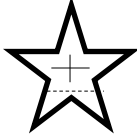
Decision Support Matrix (DSM)			Operation/Plan	
DP #	Decision	Criteria	PIR /NAI	Action
	What decision must be made	The criteria is the condition(s) that when met require the decision to be made. IF the enemy does	What PIR(s) and NAI(s) are linked to the DP	The action is the response taken to the criteria once the decision has been made. THEN we do.....
	Vicinity of:			
	Vicinity of:			
	Vicinity of:			
	Vicinity of:			
	Vicinity of:			

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Course of Action Analysis (cont.)

Some Tools That May Help

Sample Decision Support Card

 VICINITY OF:	<i>Criteria</i> IF _____ _____
	<i>Available Elements/ Systems / Conditions</i> And _____
PIR #	<i>Action</i> THEN _____ _____ _____
NAI # (s) <small>If none exist establish one (add to graphics) linking it to the decision</small>	
<small>Considerations: [1] Air Assets, [2] Artillery, [3] Shift of Priority or Effort, [4] Task Org change, [5] Unit moves</small>	
DECISION (Made by the CDR) _____ _____ _____	
<small>This is a proposed decision. The Commander may decide other options exist and decide to act differently.</small>	

Notes:

Course of Action Analysis (cont.)

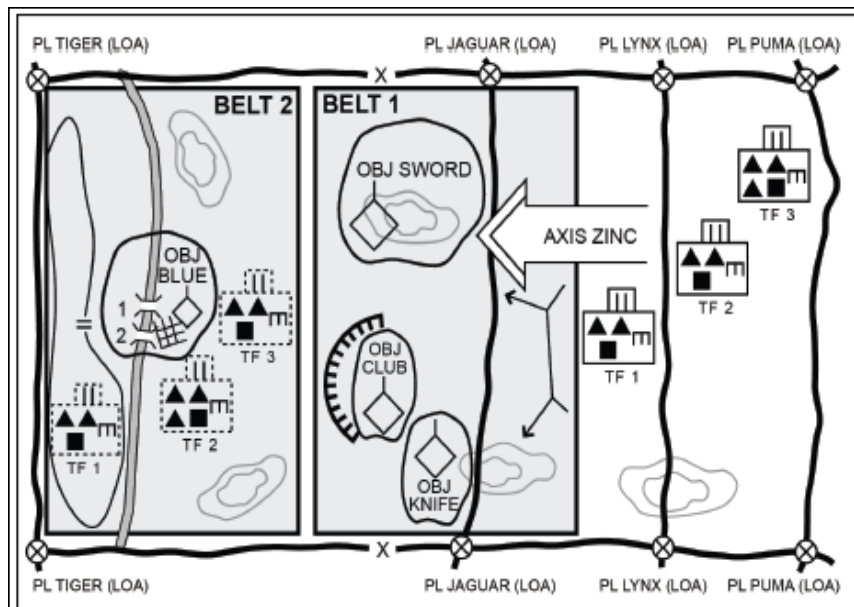
Some Tools That May Help

Belt Method Course of Action

The belt method divides the AO into belts (areas) running the width of the AO. The shape of each belt is based on the factors of METT-TC. The belt method works best when conducting offensive and defensive operations on terrain divided into well-defined cross-compartments, during phased operations (such as gap crossings, air assaults, or airborne operations), or when the enemy is deployed in clearly defined belts or echelons. Belts can be adjacent to or overlap each other. (Re. Chapter 4-146, *ATTP 5-0.1*)

This war-gaming method is based on a sequential analysis of events in each belt. Commanders prefer it because it focuses simultaneously on all forces affecting a particular event. A belt might include more than one critical event. Under time-constrained conditions, the commander can use a modified belt method. The modified belt method divides the AO into not more than three sequential belts. These belts are not necessarily adjacent or overlapping but focus on the critical actions throughout the depth of the AO. (Re. Chapter 4-147, *ATTP 5-0.1*)

Sample Belt Method Course of Action (Re. Figure 4-6, *ATTP 5-0.1*)



Course of Action Analysis (cont.)

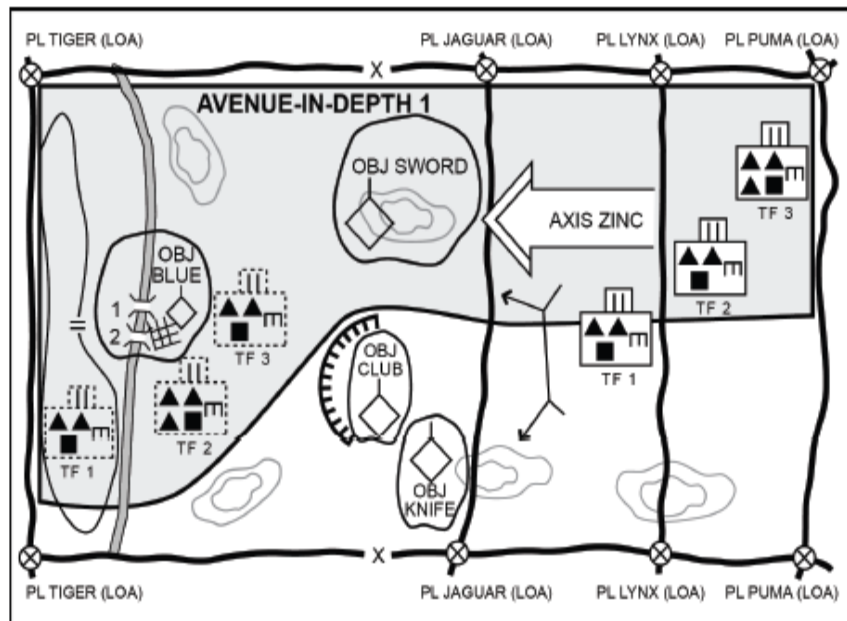
Some Tools That May Help

Avenue in Depth Method Course of Action

The avenue-in-depth method focuses on one avenue of approach at a time, beginning with the decisive operation. This method is good for offensive COAs or in the defense when canalizing terrain inhibits mutual support. (Re. Chapter 4-149, *ATTP 5-0.1*)

In stability operations, planners can modify the avenue-in-depth method. Instead of focusing on a geographic avenue, the staff war-games a line of effort. This method focuses on one line of effort at a time, beginning with the decisive line. It includes not only war-gaming events, objectives, or events and objectives in the selected line, but also war-gaming relationships among events or objectives on all lines of effort with respect to events in the selected line. (Re. Chapter 4-150, *ATTP 5-0.1*)

Sample Avenue in Depth Method Course of Action
(Re. Figure 4-8, *ATTP 5-0.1*)



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Course of Action Analysis (cont.)

Some Tools That May Help

Avenue in Depth Method Course of Action (cont.)

Notes:

Course of Action Analysis (cont.)

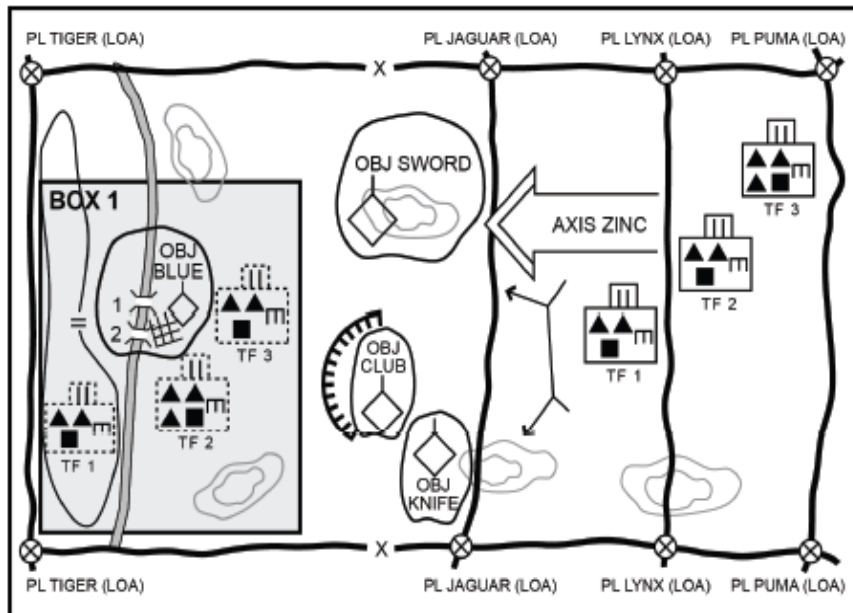
Some Tools That May Help

Box Method Course of Action

The box method is a detailed analysis of a critical area, such as an engagement area, a river crossing site, or a landing zone. (See Figure 4-10, page 4-30.) It works best in a time-constrained environment, such as a hasty attack. It is particularly useful when planning operations in noncontiguous AOs. When using this method, the staff isolates the area and focuses on critical events in it. Staff members assume that friendly units can handle most situations in the AOs and focus their attention on essential tasks. (Re. Chapter 4-151, ATTP 5-0.1)

In stability operations, the box method may focus analysis on a specific objective along a line of effort, such as development of local security forces as part of improving civil security. (Re. Chapter 4-152, ATTP 5-0.1)

Sample Box Method Course of Action (Re. Figure 4-10, ATTP 5-0.1)



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Course of Action Analysis (cont.)

Some Tools That May Help

Synchronization Matrix

The *synchronization matrix* is a tool the staff uses to record the results of war-gaming and helps them synchronize a course of action across time, space, and purpose in relationship to potential enemy and civil actions. (See Figure 4-12.) The first entry is the time or phase of the operation. The second entry is the most likely enemy action. The third entry is the most likely civilian action. The fourth entry is the decision points for the friendly COA. The remainder of the matrix focuses on selected warfighting functions, their subordinate tasks, and the unit’s major subordinate commands. (Re. Chapter 4-154, *ATTP 5-0.1*)

Synchronization Matrix (Sample 1) (Re. Figure 4-12, ATTP 5-0.1)


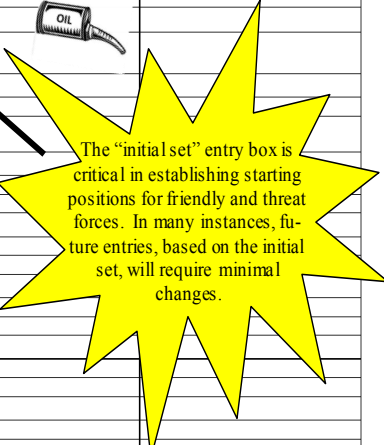
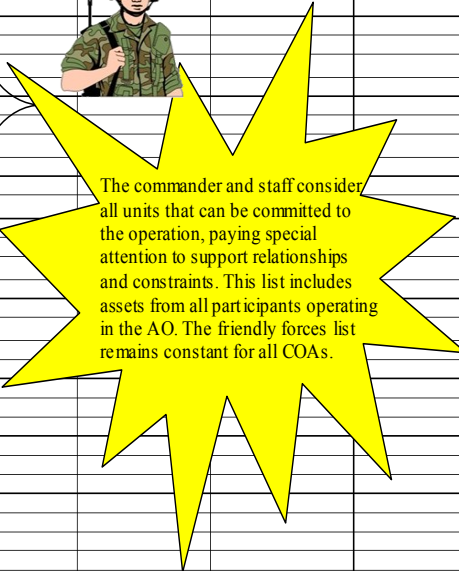
Time/Event		H - 24 hours	H-hour	H + 24
Enemy or Adversary Action		Monitors movements	Defends from security zone	Commits reserve
Population		Orderly evacuation from area continues		
Decision Points		Conduct aviation attack of OBJ Irene		
Control Measures				
Movement and Maneuver	1st BCT	Move on Route Irish	Cross LD	Seize on OBJ Irene
	2d BCT	Move on Route Longstreet	Cross LD	Seize on OBJ Rose
	3d BCT			FPOL with 1st BCT
	Avn Bde	Attack enemy reserve on OBJ Irene		
	R&S			
Reserve				
Intelligence				
Fires		Prep fires initiated at H-5		
Protection	Engineer			
	PMO			
	AMD			
	CBRN			
Sustainment				
Mission Command			Main CP with 1st BCT	
Close Air Support				
Electronic Warfare			Enemy command and control jammed	
Nonlethal		Surrender broadcasts and leaflets		
Host Nation				
Interagency				
NGOs			Begins refugee relief	
Note: The first column is representative only and can be modified to fit formation needs.				
AMD	air and missile defense		LD	line of departure
Avn Bde	aviation brigade		NGO	nongovernmental organization
BCT	brigade combat team		OBJ	objective
CBRN	chemical, biological, radiological, and nuclear		PMO	provost marshal office
CP	command post		R&S	reconnaissance and surveillance
FPOL	forward passage of lines			

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Course of Action Analysis (cont.)

Some Tools That May Help

Synchronization Matrix (Sample 2)

CRITICAL EVENT	INITIAL SET	ACTION	REACTION	COUNTERACTION
SUB EVENT				
TIME				
WFF MOVEMENT AND MANEUVER				
SCOUTS				
TASK (What will this unit do?)				
PURPOSE (What does this action allow us to do?)				
SNIPER SQUAD				
TASK				
PURPOSE				
TM 1				
TASK				
PURPOSE				
TM 2				
TASK				
PURPOSE				
TM 3				
TASK				
PURPOSE				
TM 4				
TASK				
PURPOSE				
2/A/33 BSTB (SAPPER)				
TASK				
PURPOSE				
3/45 EN (RT CLR)				
TASK				
PURPOSE				
ANA TM 1				
TASK				
PURPOSE				
ANA TM 2				
TASK				
PURPOSE				
ANA TM 3				
TASK				
PURPOSE				
ANA WPNS				
TASK				
PURPOSE				
RECON PLT				
TASK				
PURPOSE				
MORTAR PLT				
TASK				
PURPOSE				
AT PLT				
TASK				
PURPOSE				
HVY MG PLT				
TASK				
PURPOSE				

Course of Action Analysis (cont.)

Some Tools That May Help

Synchronization Matrix (Sample 2) (cont.)

CRITICAL EVENT	INITIAL SET	ACTION	REACTION	COUNTERACTION
SUB EVENT				
TIME				
WFF INTELLIGENCE				
NAI				
TIED TO WHICH PIR?				
COLLECTION ASSET TASKED				
TIED TO A DECISION?				
HCT TM 3				
TASK				
PURPOSE				
WFF FIRES				
TASK (What we will do to the enemy, i.e. Destroy, Disrupt, Delay, Limit, Divert. This becomes part 1 of FST Purpose)				
PURPOSE (What does this action allow us to do? This becomes part 2 of FST Purpose)				
EXECUTION (Describes HOW we will accomplish this task)				
METHOD (How we will accomplish the task)				
- Lethal				
POF				
Azimuth of Fire)				
2/A/2-122 FA (DS) (Task, Purpose)				
Orientation, Targets)				
Orientation, Targets)				
Orientation, Targets)				
Orientation, Targets)				
Orientation, Targets)				
COLT 3 (Task, Purpose)				
COLT 4 (Task, Purpose)				
CAS (ACAs, SEAD, Trigger to IP, Trigger to TGT, Terminal Control)				
HELO (ACAs/ACP, SEAD, Trigger to IP, Trigger to TGT, Terminal Control)				
- Non-Lethal				
IO (Asset, Task, Purpose, Method, Location, Targets, Talking Points)				
PA (Asset, Task, Purpose, Method, Location, Targets, Talking Points)				
1/4/324 TMD				
TASK				
PURPOSE				
Location, Targets)				
1/D/155 CA BN				
TASK				
PURPOSE				
2/D/155 CA BN				
TASK				
PURPOSE				
are in effect)				
ASSESSMENT (What is success? What is reattack criteria?)				

Some Tools That May Help

The intelligence Collection Plan continues to be addressed throughout the war-game process. By ensuring requirements are recorded based on friendly actions and threat reactions, the collection matrix will be flushed out and subordinate elements can be tasked with specific collection tasks.


Determine the level of detail required to ensure minimal issues need to be revisited during the war-game. Ensuring each staff member gets a blank copy of the synch matrix to be used allows them to pre-fill out their war-game worksheet for each critical event addressed.

Course of Action Analysis (cont.)


Some Tools That May Help

Synchronization Matrix (Sample 2) (cont.)

CRITICAL EVENT	INITIAL SET	ACTION	REACTION	COUNTERACTION
SUB EVENT		}		
TIME				
WFF SUSTAINMENT				
PERSONNEL (Status/Key Shortages)				
BAS LOCATION				
AXP LOCATION				
MEDEVAC LZ LOCATION				
CLASS I (Status/Location)				
CLASS III (Status/Location)				
CLASS V (Status/Location)				
SMALL ARMS				
MORTAR				
MAINTENANCE STATUS (Projections)				
FSC LOCATION (Assets/Locations)				
SUSTAINMENT TRIGGERS (Anticipation)				
WFF MISSION COMMAND				
CMD GRP (LOCATION, MANNING and FUNCTION)				
MAIN CMD POST (LOCATION, MANNING and FUNCTION)				
CTCP (LOCATION)				
FTCP (LOCATION)				
RETRANS 1 (NET and LOCATION)				
RETRANS 2 (NET and LOCATION)				
RISK				
ACCIDENTAL TACTICAL				
WFF PROTECTION				
SURVIVABILITY				
TASK				
PURPOSE				
CBRNE				
TASK				
PURPOSE				
ADA				
TASK				
PURPOSE				
EEFI				
Enemy Reaction/Action				
TASK				
PURPOSE				
Enemy Decision Points				
COUNTER ACTION				
MANEUVER				
INTELLIGENCE				
FIRES				
SUSTAINMENT				
COMMAND AND CONTROL				
PROTECTION				
COA STRENGTHS				
COA WEAKNESSES				

 The war-game is based on the action-reaction-counteraction process as depicted above. Be careful as you execute this process to determine who has the initiative. This is important because the process is lengthy and time consuming. Having to continue through multiple iterations of action-reaction-counteraction-counteraction-counteraction because the S-3 determined he was the aggressor based on the assumption that he was conducting a reconnaissance patrol will waste the staff's time and tax their patience. BLUF...being on the offense does not automatically make you the action portion of the process. Being in the defense does not automatically make you the reaction part of the process. The local security patrol patrolling outside the FOB that sets up a hasty ambush is the aggressor, not the enemy force trying to attack the FOB!

The action-reaction-counteraction process may need to continue to ensure all possibilities and second and third order effects are addressed but this *generally* does not happen.

 Course of Action Analysis and War-gaming are not synonymous. They are two separate pieces of the same task step. That is why they are listed separately. The war-game is the action-reaction-counteraction process that allows for the synchronization of all elements and support across space and time. The analysis comes in by determining if there are specific decisions the commander must make, where he must make them, and how this creates branches or sequels the staff must address. Course of action analysis defines the individual strengths and weaknesses of each COA based on comparison of the COA to the evaluation criteria, the commander's intent and guidance, and FADS criteria. The analysis of this step provides direct input into the creation of the decision matrix during COA comparison. Remember to treat these COAs as individual entities during COA analysis and do not compare one COA to another. Also ensure each set of enemy actions remains consistent throughout the war-game to ensure results are not skewed.

Course of Action Analysis (cont.)

Some Tools That May Help

Sketch Note Technique

The sketch note technique uses brief notes concerning critical locations or tasks and purposes. These notes refer to specific locations or relate to general considerations covering broad areas. The commander and staff mark locations on the map and on a separate war-game work sheet.

Staff members use sequential numbers to link the notes to the corresponding locations on the map or overlay.

Staff members also identify actions by placing them in sequential action groups, giving each subtask a separate number. They use the war-game work sheet to identify all pertinent data for a critical event. They assign each event a number and title and use the columns on the work sheet to identify and list in sequence—

- Units and assigned tasks.
- Expected enemy actions and reactions.
- Friendly counteractions and assets.
- Total assets needed for the task.
- Estimated time to accomplish the task.
- The decision point tied to executing the task.
- CCIRs.
- Control measures.
- Remarks.

(Re. Chapter 4-155, ATTP 5-0.1)

Sample Sketch Note Technique (Re. Figure 4-13, ATTP 5-0.1)

Critical Event	Seize OBJ Sword
Sequence number	1
Action	TF 3 attacks to destroy enemy company on OBJ Sword
Reaction	Enemy company on OBJ Club counterattacks
Counteraction	TF 1 suppresses enemy company on OBJ Club
Assets	TF 3, TF 1, and 1-78 FA (155-SP)
Time	H+1 to H+4
Decision point	DP 3a and 3b
Commander's critical information requirements	Location of enemy armor reserve west of PL Jaguar
Control measures	Axis Zinc and support by fire position 1
Remarks	

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Acronyms and Abbreviations

A

ACoS – assistant chief of staff
ADA – air defense artillery
AI – area of influence
AO – area of operations
ARNG – Army National Guard
ASCOPE – areas, structures, capabilities, organizations, people, and events
ATTP – Army Tactics, Techniques, and Procedures

B

BDE – brigade
BSTT – Battalion Staff Training Team
BUB – battle update briefing

C

CA – civil affairs
CASEVAC – casualty evacuation
CBRNE – chemical, biological, radioactive, nuclear and high yield explosives
CCIR – commander’s critical intelligence requirements
CDR – commander
COA – course(s) of action
COA-D – course of action development
COO – combined obstacle overlay
COP – common operational picture
CP – command post
CTCP – combat trains command post

D

DP – decision point
DSCA – defense support of civil authorities (replaced civil support)
DSM – decision support matrix
DST – decision support template
DTED – digital terrain elevation data
DTT – Doctrine Training Team

E

EEFI – essential element(s) of friendly information
EVENTEMP – event template

Acronyms and Abbreviations

F

FADS-C – feasible, acceptable, distinguishable, suitable, complete
FFIR – friendly forces information requirement(s)
FM – field manual
FRAGO – fragmentary order
FSC – forward support company
FSCM – fire support coordination measures
FSO – fire support officer
FSMT – forward support medical evacuation team
FSP – forward supply point
FST – fire support tasks

G

GCM – graphic control measure(s)
GLOCS – ground lines of communication

H

HHQ – higher headquarters
HN – host nation
HPT – high-payoff target
HPTL – high-payoff target list
HVT – high-value target
HVTL – high-value target list

I

INFOSYS – information systems
IPB – intelligence preparation of the battlefield
IR – information requirement(s)
ISR – intelligence, surveillance, and reconnaissance (per Army terminologist)
IVL – intervisibility line

L

LD – line of departure
LEIOV – latest event information of value
LOA – limit of advance
LOC – line(s) of communications
LOS – line-of-sight
LTIOV – latest time information is of value

Acronyms and Abbreviations

M

MA – mission analysis
MC – mission command
MCOO – modified combined obstacle overlay
MCS – mobility, counter-mobility, and survivability
MCS – Mission Command Systems
MCTSP – Mission Command Training Support Program
MDMP – Military Decision Making Process
MEDEVAC – medical evacuation
METT-TC – mission, enemy, terrain, time available, troops available and civilians
MISO – military information support operations (formerly PSYOP)
MOE – measure of effectiveness
MOP – measure of performance
MTC – Mission Training Complex
MTC-LVN – Mission Training Complex-Fort Leavenworth

N

NAI – named area(s) of interest
NCO – noncommissioned officer

O

OAKOC – observation and fields of fire, avenues of approach, key terrain, obstacles, and cover and concealment
OE – operational environment
OIL – observations, insights, and lessons
OPFOR – opposing force(s)
OPLAN – operation plan
OPORD – operation order
OPSEC – operational security

P

PIR – priority intelligence requirements
PLT – platoon
PSOP – plans standard operating procedure

R

R&S – reconnaissance and surveillance
RETRANS – retransmission
RFI – request(s) for information
ROE – rules of engagement
RTO – radio-telephone operator

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Acronyms and Abbreviations

S

SA – situational awareness

SIGO – signal officer

SIR – specific information requirement(s)

SITTEMP – situation template

SOP – standard operating procedure(s)

SU – situational understanding

SWEAT-MSO – sewage, water, electricity, academic, trash-medical, safety, and other considerations

T

TACSOP – tactical standard operating procedures (also called **TSOP**)

TAFT – Training Analysis Feedback Team

TAI – targeted area(s) of interest

TLP – troop-leading procedure(s)

TO – task organization

TPED – tasking, processing, exploitation, and dissemination

W

WARNO – warning order

WFF – warfighting function

X

XO – executive officer

Glossary

This glossary contains a selection of terms, with definitions, intended to assist the unit commander and staff when executing the MDMP. The definitions were taken from selected ATTPs, ADPs, ADRPs, Joint Technical Publications (JTP), and several FMs, including FM 1-02, *Operational Terms and Graphics*.

-A-

Area of Influence (AI) – A geographical area wherein a commander is directly capable of influencing operations by maneuver and fire support systems normally under the commander's command or control. JP 1-02

Area of Interest (AOI) – That area of concern to the commander, including the area of influence, areas adjacent thereto, and extending into enemy territory to the objectives of current or planned operations. This area also includes areas occupied by enemy forces who could jeopardize the accomplishment of the mission. JP 2-03

Area of Operations (AO) – An operational area defined by the joint force commander for land and naval forces. Areas of operations do not typically encompass the entire operational area of the joint force commander, but should be large enough for component commanders to accomplish their missions and protect their forces. JP 3-0

Areas, Structures, Capabilities, Organizations, People, and Events (ASCOPE) – Acronym is retained but no longer formally defined. ADRP 6-0

-C-

Commander's Critical Information Requirements (CCIR) – (joint) An information requirement identified by the commander as being critical to facilitating timely decision-making. The two key elements are friendly force information requirements and priority intelligence requirements. JP 3-0

Course of Action Development (COA-D) – The COA development step generates options for follow-on analysis and comparison that satisfy the commander's intent and planning guidance. ATTP 5-0.1

Combined Obstacle Overlay (COO) – The combined obstacle overlay is used to depict areas where military mobility can be categorized as unrestricted, restricted, or very restricted. Unrestricted areas are free of any obstacles or restrictions to movement. Restricted areas are usually depicted on overlays by diagonal lines to indicate terrain that hinders movement to some degree. Very restricted areas are usually depicted by crosshatched diagonal lines to indicate terrain that severely hinders or slows military movement unless some effort is made to enhance mobility. JP 1-02

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Glossary

Common Operational Picture (COP) – (Army) A single display of relevant information within a commander’s area of interest tailored to the user’s requirements and based on common data and information shared by more than one command. FM 3-0

Composite Risk Management (CRM) – Composite risk management is the Army’s primary decision making process for identifying hazards and controlling risks across the full spectrum of Army missions, functions, operations, and activities (Term changed to Risk Management IAW Army Terminologist) FM 5-19

-D-

Decisive Point (DP) – (joint) A geographic place, specific key event, critical factor, or function that, when acted upon, allows commanders to gain a marked advantage over an adversary or contribute materially to achieving success. JP 3-0 (Note: In this context, adversary also refers to enemy.)

Decision Support Matrix (DSM) – A written record of a war-gamed course of action that describes decision points and associated actions at those decision points. ADRP 5-0

Decision Support Template (DST) – A combined intelligence and operations graphic based on the results of wargaming. The decision support template depicts decision points, timelines associated with movement of forces and the flow of the operation, and other key items of information required to execute a specific friendly course of action. JP 2-01.3

Digital Terrain Elevation Data (DTED) – A standard of digital datasets which consists of a matrix of terrain elevation values.

-E-

Essential Element of Friendly Information (EEFI) – (Army) A critical aspect of a friendly operation that, if known by the enemy, would subsequently compromise, lead to failure, or limit success of the operation, and therefore should be protected from enemy detection. FM 1-02

Event Template (EVENTEMP) – A model against which enemy activity can be recorded and compared. It represents a sequential projection of events that relate to space and time on the battlefield and indicate the enemy’s ability to adopt a particular course of action. The event template is a guide for collection and reconnaissance and surveillance planning. FM 2-01.3

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Glossary

Execution Matrix – A visual and sequential representation of the critical tasks and responsible organizations by time or for a tactical operation used as a staff tool. ATTP 5-0.1

-F-

Friendly Force Information Requirement (FFIR) – (joint) Information the commander and staff need to understand the status of friendly force and supporting capabilities. ATTP 5-0.1

-I-

Intelligence Preparation of the Battlefield (IPB) – IPB is the staff planning activity undertaken by the entire staff to define and understand the AO and the options it presents to friendly and enemy forces. It includes input from the whole staff. IPB is a systematic process of analyzing and visualizing the enemy and AO in a specific geographic area for a specific mission or in anticipation of a specific mission. FM 2-0

Information Requirement (IR) – Any information element the commander and staff require to successfully conduct operations. ADRP 6-0

Intervisibility Line (IVL) – Not a terrain feature, but an effect of terrain on observation. A relative, localized, pattern of limitations on observation, caused by (often subtle) variations in terrain elevation relative to an Observer and the Observed. Terrain that allows observation from one point to another. FM 3-90.1

Intelligence Warfighting Function – The related tasks and systems that facilitate understanding of the operational environment, enemy, terrain, and civil considerations. FM 3-0

-L-

Latest Event Information of Value (LEIOV) – A subset of LTIOV, an event which dictates the latest time the information can be used by the commander in making the decision the priority intelligence requirement supports. TC 2-01

Latest Time Intelligence is of Value (LTIOV) – The time by which information must be delivered to the requestor in order to provide decision-makers with timely intelligence. FM 2-01.3

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Glossary

-M-

Modified Combined Obstacle Overlay (MCOO) – A digital or analog graphic depiction of the terrain which provides the basis for identifying air and ground AA and mobility corridors. It integrates into one overlay all obstacles to movement, including but not limited to, built-up areas, slope, soil, vegetation, and transportation systems. FM 2-01.3

Military Information Support Operations (MISO) – Planned operations to convey selected information and indicators to foreign audiences to influence their emotions, motives, objective reasoning, and ultimately the behavior of foreign governments, organizations, groups, and individuals in a manner favorable to the originator's objectives. JP 3-13.2

Mission Command – The conduct of military operations through decentralized execution based on mission orders. Successful mission command demands that subordinate leaders at all echelons exercise disciplined initiative, acting aggressively and independently to accomplish the mission within the commander's intent. FM 3-0

Measure of Effectiveness (MOE) – A criterion used to assess changes in system behavior, capability, or operational environment that is tied to measuring the attainment of an end state, achievement of an objective, or creation of an effect. JP 3-0

Measure of Performance (MOP) – A criterion used to assess friendly actions that is tied to measuring task accomplishment. JP 3-0

Movement and Maneuver Warfighting Function – The related tasks and systems that move forces to achieve a position of advantage in relation to the enemy. Direct fire is inherent in maneuver, as is close combat. FM 3-0

-N-

Named Area of Interest (NAI) – The geographical area where information that will satisfy a specific information requirement can be collected. Named areas of interest are usually selected to capture indications of adversary courses of action, but also may be related to conditions of the AO. FM 2-01.3

-O-

Operational Environment (joint) – A composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander. JP 1-02

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Glossary

Operational Theme – The character of the dominant major operation being conducted at any time within a land force commander’s area of operations. The operational theme helps convey the nature of the major operation to the force to facilitate common understanding of how the commander broadly intends to operate. FM 3-0

Operations Process – The major mission command activities performed during operations: planning, preparing, executing, and continuously assessing the operation. The commander drives the operations process. FM 1-02

Orders Group – A group assembled to receive a commander’s orders. The basic composition of this group is normally prescribed in the standard operating procedures of the unit or formation concerned. FM 1-02

Overlay Order – A technique used to issue an order (normally a fragmentary order) that has abbreviated instructions written on an overlay. FM 1-02

-P-

Priority Intelligence Requirement (PIR) – (joint) An intelligence requirement, stated as a priority for intelligence support, that the commander and staff need to understand the adversary or the operational environment. JP 2-0

Protection Warfighting Function – The related tasks and systems that preserve the force so the commander can apply maximum combat power. FM 3-0

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). FM 5-19

-R-

Reconnaissance and Surveillance (R&S) – Two of the primary information collection tasks. *Reconnaissance* are those operations undertaken to obtain, by visual observation or other detection methods, information about the activities and resources of an enemy or adversary, or to secure data concerning the meteorological, hydrographical or geographical characteristics and the indigenous population of a particular area. *Surveillance* is the systematic observation of aerospace, surface, or subsurface areas, places, persons, or things, by visual, aural, electronic, photographic, or other means. Surveillance involves observing an area to collect information. FM 3-55

Rules of Engagement (ROE) – Directives issued by competent military authority that delineate the circumstances and limitations under which United States forces will initiate and / or continue combat engagements with other forces encountered. JP 1-04

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Glossary

-S-

Situational Awareness (SA) – Immediate knowledge of the conditions of the operation, constrained geographically and in time. FM 1-02

Specific Information Requirement (SIR) – All information elements the commander and staff require to successfully conduct operations; that is, all elements necessary to address the factors of METT-TC. For the purposes of the intelligence warfighting function and R&S synchronization, validated information requirements are requirements that fill a gap in knowledge and understanding of the area of interest (terrain and weather, and civil considerations) or the enemy. FM 2-0

Situation Template (SITTEMP) – A series of projections that portray, based on enemy doctrine, the most probable disposition and location of enemy forces within constraints imposed by weather and terrain. FM 2-01.3

Situational Understanding (SU) – The product of applying analysis and judgment to relevant information to determine the relationships among the operational and mission variables to facilitate decision making. ADP 5-0

-T-

Troop-Leading Procedure (TLP) – A dynamic process used by small-unit leaders to analyze a mission, develop a plan, and prepare for an operation. ADP 5-0

Tasking, Processing, Exploitation, and Dissemination (TPED) – The Joint R&S concept of operations which addresses how all available collection assets are used to answer the Joint force's intelligence requirements. FM 3-55

-W-

Warfighting Function (WFF) – A group of tasks and systems (people, organizations, information, and processes) united by a common purpose that commanders use to accomplish missions and training objectives. FM 3-0