

2006 Command and Control Research and Technology Symposium
The State of the Art and the State of the Practice

Topic: Command and Control Experimentation

Effects-Based Operation Planning: “Convergent” Course of Action (COA) Development

Author: Louis M. Durkac, Colonel, USAF*

Faculty Advisor: David Spangler, CMDR, USN

Joint Forces Staff College, Norfolk, VA
Student Paper

17 Feb 2006

133 Bowen Street
Langley AFB, VA 23665
Telephone: (520) 405-8317
Fax: (757) 764-2884
Email: louis.durkac@langley.af.mil

The views expressed in this paper are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.

Report Documentation Page			Form Approved OMB No. 0704-0188		
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 17 FEB 2006		2. REPORT TYPE		3. DATES COVERED 00-00-2006 to 00-00-2006	
4. TITLE AND SUBTITLE Effects-Based Operation Planning: 'Convergent' Course of Action (COA) Development				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Joint Forces Staff College,133 Bowen Street,Langley AFB,VA,23665				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES 2006 Command and Control Research and Technology Symposium					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 20	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

Abstract

Effects-based operations (EBO) and the related effects-based approach to planning (EBAP) have now been incorporated into US joint doctrine. In addition to campaign objectives and tasks, effects of those tasks are now taken into consideration during the joint operations planning phase of the campaign. The latest draft version of Joint Publication (JP) 5-0, *Joint Operations Planning*, does a good job explaining the benefits of EBO and EBAP, but leaves the reader with an indifferent attitude, since the planning process remains basically unchanged. In order to fully exploit the power of EBO, the planning process needs to be altered to allow the actions from one phase of a campaign to be analyzed with respect to their effects on the other phases.

The proposed new methodology (the “convergent” method) forces planners to abandon the thought process that there is only so much you can accomplish in a phase and that the next phase must live with the results. The backwards, or “convergent” planning model forces planners to find a way to achieve results that ultimately support objectives in the later phases, that in fact more directly produce long-lasting success.

This paper describes the “convergent” method of joint operation planning and a study conducted at the Joint Forces Staff College to refine the method and analyze its utility for the joint planner.

Current Operational Planning Shortfalls

Effects-based operations (EBO) and the related effects-based approach to planning (EBAP) have now been incorporated into US joint doctrine.¹ In addition to campaign objectives and tasks, effects of those tasks are now taken into consideration during the joint operations planning phase of the campaign. EBO concepts face a cautious and skeptical audience of professional military planners who are not convinced of the merits of an EBAP over the current planning methodology.² The latest draft version of Joint Publication (JP) 5-0, *Joint Operations Planning*, does a good job explaining the benefits of EBO and EBAP, but leaves the reader with an indifferent attitude, since the planning process remains basically unchanged. In order to fully exploit the power of EBO, the planning process needs to be altered to allow the actions from one phase of a campaign to be analyzed with respect to their effects on the other phases. Additionally, the chronological methodology of current joint operation planning does not take advantage of the reason for EBO in the first place. The new draft JP 5-0 mentions consideration of the end-state when planning earlier phases, but falls short of suggesting actually starting with the final phases and working backwards to the beginning.³

Joint Operation Planning

Military planning consists of joint strategic planning with its three subsets: security cooperation planning, joint operation planning, and force planning.⁵ Joint operation planning focuses on the conduct of military operations by joint force commanders. Joint operation planning can either be accomplished through contingency planning (non-crisis situations) or crisis action planning (time-sensitive situations). Both types of joint operation planning follow the same basic process with regards to EBAP incorporation. The joint operation planning process (JOPP) has seven steps, as outlines in **Figure 1**. Steps 2 and 3, Mission Analysis and Course of Action (COA) Development, are the steps where an EBAP has the most influence on the plan. It is during Step 2: Mission Analysis, that the national strategic end state and theater strategic end state are used to determine the desired effects and objectives required to accomplish the mission. Step 2 produces the commander's initial intent statement and initial planning guidance, from which the COAs are developed.

The Joint Operation Planning Process
Step 1: Initiation
Step 2: Mission Analysis
Step 3: Course of Action (COA) Development
Step 4: COA Analysis and Wargaming
Step 5: COA Comparison
Step 6: COA Approval
Step 7: Plan or Order Development

Figure 1: The Joint Operation Planning Process⁴

Phasing is a concept which allows the planner to chop a campaign into manageable parts. While transitions from one phase to another during execution may not be seamless, the planner can use EBAP to analyze when objectives for a particular phase have been accomplished. An example of a Phasing Model is illustrated in **Figure 2**.

PHASING MODEL					
SHAPE Phase 0	DETER Phase I	SEIZE INITIATIVE Phase II	DOMINATE Phase III	STABILIZE Phase IV	ENABLE CIVIL AUTHORITY Phase V
PREVENT PREPARE	CRISIS DEFINED	ASSURE FRIENDLY FREEDOM OF ACTION/ ACCESS THEATER INFRASTRUCTURE	ESTABLISH DOMINANT FORCE CAPABILITIES/ ACHIEVE FULL-SPECTRUM SUPERIORITY	ESTABLISH SECURITY RESTORE SERVICES	TRANSFER TO CIVIL AUTHORITY REDEPLOY

Figure 2. Phasing Model⁶

Objectives for each phase prescribe friendly goals. Effects describe battlespace behavior – often the desired behavior of the enemy. Tasks direct friendly action.⁷ Ideally, objectives are derived from strategic and theater end state, effects are derived from the objectives, and tasks are derived from the desired effects. The current planning methodology progresses from phase 0 through V chronologically. Unfortunately, most of the emphasis is placed on phases 0 through III, with phases IV and V getting little attention due to the inherent uncertainty of the actual progress of any campaign. On the surface, it would seem unwise to spend too much time on planning for the latter phases of an operation and miss critical details of the initial phases. Unfortunately, most of the issues the US military has had in recent campaigns have not involved phase III objectives, but how actions taken in phases 0 through III have affected phases IV and V. While detailed planning for latter phases may not be warranted, determining the objectives, effects, and tasks for those phases is a critical requirement prior to developing COAs for the earlier phases, since actions taken then will affect the end state conditions of the campaign.

Proposed Effects-Based Joint Operation Planning Methodology

It would seem intuitive that one would have to plan the phases in ascending order to determine force flow and take projected operational results from one phase to begin the next. However, this methodology pre-supposes that, as a planner, you are stuck with the realities of the previous phase, instead of using the previous phase to set the conditions for the next. This method also does not take into consideration that the later phases are in fact much more important for achieving the end-state of some operations, and therefore must be worked first to determine what pre-conditions must be in place to begin the phase in order to have a reasonable chance of success. These pre-conditions are critical and in fact must be achieved in the previous phase of operations for the mission to have any chance of success. These pre-conditions become the critical objectives that significantly shape that earlier phase. Likewise, as each phase earlier in the operation receives the pre-conditions necessary to start the phase that follows in time, they are also dramatically focused by those critical requirements.

This new methodology forces planners to abandon the thought process that there is only so much you can accomplish in a phase and that the next phase must live with the

results. The backwards, or “convergent” planning model forces planners to find a way to achieve results that ultimately support objectives in the later phases, that in fact more directly produce long-lasting success. Additionally, we suspect, the positive effects can be more focused and efficiently achieved and the negative effects better controlled or eliminated.

An study conducted by Seminar 11 of the Joint Forces Staff College developed the “convergent” COA development methodology.⁸ The proposed methodology begins at the end-state, and works backward through each phase to the beginning of the operation. Objectives for the end-state yield desired effects and tasks, which the previous phases must support. Commander’s guidance is crucial to determining the end-state objectives. Since commanders are not used to this methodology, their end-state guidance may be rudimentary and insufficient for detailed planning. In this case, strategic and theater objectives will have to fill-in the gaps. In this way, the planning team can help the commander solidify and crystallize the end-state objectives in a way the current method does not accommodate, leading to a commander’s intent which is more holistic and unambiguous.

The study consisted of two planning teams, each given identical initial planning guidance. One team used the current chronological EBAP methodology. The second team used the “convergent” methodology, beginning at the end-state and working backwards through the phases of the operation. The resultant COAs were analyzed and wargamed to assess the COA’s adequacy, feasibility, acceptability, completeness, and compliance with joint doctrine. Effect threads from one phase to another were derived from the tasks specified in each phase.

Comparing the two COAs in this way will determine if the proposed methodology is beneficial to the joint operation planner, and the joint forces commander. The “convergent” COA must exhibit superior characteristics than the one derived via the current method, or its value may be limited. One assumption is that the proposed method will take more time than the current method. It will also be difficult to start at the end-state when the team is enduring pressure from supporting agencies regarding transportation inquiries and requests for forces. The commander may not have the patience to wait for the plan to get to the beginning when long-lead items must be resolved early in the process. The proposed planning method is named “convergent” vice “backward” for just this reason. The team may have to simultaneously work on phases IV/V and 0/I, then “converge” the plan to phases II and III. Another possible approach is to rapidly cycle from phase V through phase 0 setting top-level objectives, then repeating the cycle for desired effects, and again for specified tasks. In this manner, the pressing requirements of phases II and III listed above can be roughly identified before detailed planning is accomplished. A subjective analysis of the merits of the proposed planning method will also consider the difficulty in changing joint doctrine.

Payoff

The payoff from the proposed joint operation planning method is still to be determined. It is postulated that the process will produce a more holistic and complete COA, forcing the planning team to consider desired effects for later phases prior to specifying tasks in earlier phases. An improved commander's intent statement should be another favorable outcome of the process. A more holistic and complete COA will lead to a better overall operation plan, one which considers the end-state throughout the entire planning process. And finally, a set of well-defined effects for each phase, which support each other throughout the phases of the operation, can be more easily monitored and adjusted once plan execution occurs.

Close

Results from the experiment will be incorporated into the presentation to be submitted for mass consumption and discussion to the Command and Control Research and Technology Symposium (CCRTS) in June, 2006.

¹ Joint Pub 5-0, *Joint Operation Planning*, (Final Coordination Draft), 4 Jan 2006.

² *An Effects-Based Approach to Joint Operations – Where Are We Now?*, A Common Perspective, US Joint Forces Command Joint Warfighting Center Doctrine and Education Group's Newsletter, Volume 13, No. 2, Oct 2005.

³ JP 5-0, p 54.

⁴ Ibid, p 54.

⁵ Ibid, p I-1.

⁶ Ibid, p IV-33.

⁷ Ibid, p 52.

⁸ Joint Forces Staff College, Class 06-2, Seminar 11, Feb-Mar 2006.

Joint Planning Process

Effects Based Approach to Planning (EBAP): The “Convergent” Planning Method

Seminar 11
Joint Forces Staff College
Class 06-2

Briefer: Louis M. Durkac, Col, USAF

Joint Planning

The Joint Operation Planning Process Has Not
Changed To Take Full Advantage Of An Effects-
Based Approach

A New Operation Planning Process Methodology
Should Be Explored To Take Full Advantage Of
An Effects-Based Approach To Planning (EBAP)

Background

- Military Planning
 - *Security Cooperation Planning*
 - *Joint Operation Planning*
 - *Force planning*
- Joint Operation Planning Steps
 - *Initiation*
 - *Mission Analysis**
 - *Course of Action (COA) Development*, Analysis, Comparison, Approval*
 - *Plan or Order Development*

*Primary Effects-Based Inject Points

Definitions

- Objectives – Prescribe Friendly Goals
 - “*what do we want to happen?*”
- Effects – Describe Battlespace Behavior
 - “*what will it look like when the objective has been achieved?*”
- Tasks – Direct Friendly Action
 - “*what do I (or others) have to do to achieve the desired effect?*”

Effects - Rationale

- Why insert “Effects” Between “Objectives” and “Tasks”?
 - *Verbalizing the Effects Separate from Tasks Enables Non-Military or Joint Solutions (Tasks) to get the Desired Effect.*
 - *Visualizing the Effect (“What Will It Look Like?”) Helps to Shape the Tasks Required, and Acts as Both an Enabler and a Constraint.*

Planning Process Objective

- Plan To The End State Given An Objective
 - *Enables Favorable Conditions in Phase V*
 - *Limits Unintended/Unfavorable Consequences/Effects in Phases IV and V*
- Consider Interagency Issues/Goals Up-Front

Study Methodology

1. List Theater Strategic & Operational Objectives (Strategic End-State – Phase V)

- *Establish/Restore Stability in the Region*
- *Protect/Re-Establish Borders*
- *Promote/Rebuild Self-Defense Capability*
- *Protect/Rebuild Utilities/Infrastructure and Main Source of National Income*
- *Support/Create an Environment Intolerant of Insurgents/Terrorists*
- *Limit/Reduce WMD Capability*

Study Methodology

2. Develop Phase V Effects For Each Objective

– *Objective: Promote Self-Defense Capability*

- Effect: Military Defense Forces Rebuilt
- Effect: Regional Alliances Renegotiated

Study Methodology

3. Develop Objectives For Previous Phases (Backwards) Using the *Phase Objective Worksheet*

<i>Phase Objective Worksheet</i>		
<i>Phase</i>	<i>Action</i>	<i>Issue*</i>
V	Limit	WMD Capability
IV	Limit	WMD Capability
III	Eliminate Critical Elements of	WMD Capability
II	Analyze Critical Elements of	WMD capability
I	Identify and Assess Critical Elements of	WMD capability
0	Limit	WMD Capability
<i>*Based on Theater Strategic Objectives</i>		

Study Methodology

4. Develop Effects For Each Objective For Each Phase, IV Through 0. *Examples:*

- *Phase IV Objective: Reconstitute Self-Defense Capability*
 - Effect: Lost Materials Replaced
 - Effect: Training Programs Initiated
- *Phase III Objective: Reinforce Self-Defense Forces*
 - Effect: Battle-Damaged Units Relieved
- *Phase II Objective: Demonstrate Military Resolve to Defend Against Attack*
 - Effect: Forces Deployed to Strategic Choke Points
 - Effect: Heightened State of Alert
- *Etc.*

Study Methodology

5. Develop Tasks For Each Effect For Each Phase, V Through 0. *Examples:*

- *Phase V Objective: Promote Self-Defense Capability*
 - Effect: Military Forces Rebuilt
 - Task: Train (Mil-to-Mil Training, Officer Training)
 - Task: Equip (Restock, Foreign Military Sales)
 - Task: Maintain Command and Control Structure
 - Task: Redeploy Coalition Forces
- *Phase IV Objective: Reconstitute Self-Defense capability*
 - Effect: Lost Materials Replaced
 - Task: Restock War Reserve Munitions
 - Task: Recapitalize Military Equipment
 - Task: Initiate Foreign Military Sales Program
- *Etc.*

Payoff

- A Strategic Focus on the End State that Leverages All Aspects of National Power Up-Front
 - *Immediate Interagency Participation*
 - *Earlier MIDLIFE Considerations (Military, Intelligence, Diplomatic, Law Enforcement, Information, Finance, and Economic elements)*
- A More Holistic and Complete COA
 - *Forces the Planning Team to Consider Desired Effects for Later Phases Prior to Specifying Tasks in Earlier Phases*
 - *An Improved Commanders Intent Statement*
 - *Effects Can Be Easily Monitored and Adjusted After Execution*

Recommendation

- Study Results Should Form The Basis For Further Concept Development Through A Campaign Of Experimentation (OPR: JFCOM J9)

“Doesn’t Dismiss the Art but Shapes the Science”

Joint Planning Process

Effects Based Approach to Planning (EBAP): The “Convergent” Planning Method

Seminar 11
Joint Forces Staff College
Class 06-2

Briefer: Louis M. Durkac, Col, USAF
HQ ACC/A8G
Langley AFB, VA
Louis.durkac@langley.af.mil
757-764-7966