

THE APPLICABILITY OF THE MILITARY DECISION-
MAKING PROCESS IN THE AIR
OPERATIONS CENTER

A thesis presented to the Faculty of the U.S. Army
Command and General Staff College in partial
fulfillment of the requirements for the
degree

MASTER OF MILITARY ART AND SCIENCE
General Studies

by

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Fort Leavenworth, Kansas
2006

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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 16 JUN 2006		2. REPORT TYPE		3. DATES COVERED	
4. TITLE AND SUBTITLE Applicability of the military decision-making process in the air operations center.				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) David Drichta				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) US Army Command and General Staff College, 1 Reynolds Ave., Fort Leavenworth, KS, 66027-1352				8. PERFORMING ORGANIZATION REPORT NUMBER ATZL-SWD-GD	
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 The original document contains color images.					
14. ABSTRACT The US Army uses the military decision-making process (MDMP) to plan operations. The US Air Force conducts planning in the Air Operations Center (AOC) using multiple methods. This thesis examines the applicability of using MDMP in the AOC. A qualitative analysis of the planning processes compares MDMP to the following AOC processes: the Joint Air Estimate Process producing the Joint Air Operations Plan (JAOP), the generation of the Air Operations Directive (AOD), and the Master Air Attack Plan (MAAP). Timeliness, standardization, and planning comprehensiveness serve as the measures to compare the processes. Timeliness was a barrier to entry for any planning process. MDMP and the JAOP both benefited from a standardized and comprehensive planning process. The development of the AOD and the MAAP lacked some standardization and comprehensiveness. The analysis concludes that MDMP has applicability in the AOC. Applying the principles and methods of MDMP would strengthen the JAOP, AOD, and MAAP processes during AOC planning.					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT 1	18. NUMBER OF PAGES 71	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

MASTER OF MILITARY ART AND SCIENCE

THESIS APPROVAL PAGE

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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

THE APPLICABILITY OF THE MILITARY DECISION-MAKING PROCESS IN THE AIR OPERATIONS CENTER by Major David S. Drichta, 71 pages.

The US Army uses the military decision-making process (MDMP) to plan operations. The US Air Force conducts planning in the Air Operations Center (AOC) using multiple methods. This thesis examines the applicability of using MDMP in the AOC. A qualitative analysis of the planning processes compares MDMP to the following AOC processes: the Joint Air Estimate Process producing the Joint Air Operations Plan (JAOP), the generation of the Air Operations Directive (AOD), and the Master Air Attack Plan (MAAP). Timeliness, standardization, and planning comprehensiveness serve as the measures to compare the processes. Timeliness was a barrier to entry for any planning process. MDMP and the JAOP both benefited from a standardized and comprehensive planning process. The development of the AOD and the MAAP lacked some standardization and comprehensiveness. The analysis concludes that MDMP has applicability in the AOC. Applying the principles and methods of MDMP would strengthen the JAOP, AOD, and MAAP processes during AOC planning.

ACKNOWLEDGMENTS

As with all things that each of us “accomplish,” there is a long chain of events and people that lead up to the accomplishment. This thesis is only possible by the support of others.

First, and foremost, I would like to thank my wife, Shannon. She gave encouragement when lacking, space and time when needed, and support always. Her companionship and love is the sturdy base that allowed me to stand through this year.

Next, I thank my thesis committee and staff instructors. Throughout the thesis process, Dr. Frame, Mr. Garven, and Colonel Neuenswander each gave of themselves to help me see my own thoughts more clearly. Their insight into the subject matter allowed me to focus on what was important as I worked my way through the discussion. The staff instructors at CGSC may never get to see the seeds of thought grow into mature ideas. Please believe that those tiny plants are taking root in my mind each day.

Finally, I would like to thank those around me daily. From my Air Force classmates, section 6C, and neighbors in “the poo,” you helped me to understand better the information thrown at us each day. I will feel blessed to find each of you at my side during the years to come.

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ACRONYMS

AFDD	Air Force Doctrine Document
AFI	Air Force Instruction
AFOTTP	Air Force Operational Tactics, Techniques, and Procedures
AOC	Air Operations Center <i>or</i> Air and Space Operations Center
AOD	Air Operations Directive
ATO	Air Tasking Order
COA	Course of Action
COMAFFOR	Commander, Air Force Forces
CONOPS	Concept of Operation
FM	Field Manual
IPB	Intelligence Preparation of the Battlespace
JAEP	Joint Air Estimate Process
JAOP	Joint Air Operations Plan
JFACC	Joint Force Air Component Commander
JFC	Joint Force Commander
JP	Joint Publication
MAAP	Master Air Attack Plan
MDMP	Military Decision-Making Process
TTP	Tactics, Techniques, and Procedures
US	United States

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CHAPTER 1

INTRODUCTION

This thesis compares the United States (US) Air Force's Air and Space Operations Center (AOC) planning processes against the Army's Military Decision Making Model and suggests standardization when possible and modification where necessary. The author served on a brigade staff as an air operations liaison officer and worked in an Air Operations Center (AOC) in both the strategy and plans divisions. This thesis lends knowledge to the AOC planning process and enables an effective use of airpower efficiently. Additionally, US Army officers serving in a Battlefield Coordination Detachment or on Joint Force Commander (JFC) staff may better understand the AOC's planning mechanisms in comparison to their service specific planning methods.

Five separate chapters build this thesis. Chapter 1 introduces the topic, research questions, and assumptions and limitations. Chapter 2 provides a review of the relevant literature related to the topic. Chapter 3 describes the research methodology while chapter 4 creates a comparative analysis of the AOC planning and Military Decision-Making Process (MDMP). Chapter 5 provides conclusions and recommendations for modifying the Air Force's planning methodology in the AOC.

Background and Context

General George S. Patton once said, "A good plan violently executed now is better than a perfect plan executed next week." The assumption of that statement is that the commander and staff have come up with a "good plan."

The AOC is the US Air Force's primary means of planning and controlling an air war. Since Desert Storm, the AOC has solidified in form and process into the Falconer weapon system. One of the AOC's strengths is the ability of the Joint Force Air Component Commander (JFACC) to plan airpower with a unity of effort in support of the JFC's plan. As demonstrated in Operation Desert Storm, planning and executing 2,000 to 3,000 (Justice 2004, 4) air sorties in a 24-hour period gives the AOC the ability to "violently execute now" General Patton's vision for a campaign.

Research Questions

This thesis examines the models of planning that the US Air Force uses within its AOC and compares them to the US Army's MDMP. The primary research question is: Does the US Army's MDMP have applicability in the AOC planning process? Several secondary questions flow from this. First, what is the Army's MDMP and how is it applied? Second, what are the strengths and weaknesses of the Army's MDMP? Using that process as a baseline, the third question answered will be, What are the decision-making processes in the AOC?

The AOC is the focus of strategic and operational planning of airpower in theater. This planning is manifest in the Joint Air Operations Plan (JAOP) and the Air Operations Directive (AOD). The AOC also begins the tactical level plan with the Master Air Attack Plan (MAAP). Specific questions follow from these base questions. First, what is a JAOP and how is it produced? Next, what is an AOD and what planning model yields this output? Finally, how does the commander and staff plan the MAAP? Once the Army's and Air Force's planning models are defined, they will be compared. In this comparison,

this thesis answers the research question: Does the US Army's MDMP have applicability in the AOC planning process?

Significance of the Research

The AOC is a system of systems. The five AOC divisions take the commander's guidance and objectives and then translate that into an actionable plan. Large communications architecture supports the divisions. While the structure and communications are important, the real heart of the AOC is the ability to assimilate information from many sources and create the unity of effort airpower requires. One way to plan is an observe, orient, decide, and act loop process. The strength of a system that quickly processes informational inputs and then turns that into action cannot be underestimated. Therefore, the planning cycle is the most important part of an AOC. In contrast, if structure or communication are lacking, there will certainly be inefficiencies. However, if the planning cycle is not effective, all the structure and communications cannot rescue the plan. An outside planning model like MDMP provides a means of comparison. Viewed through the lens of MDMP, the AOC's planning processes may gain insight into more efficient planning, better strategy and decisions, and a common understanding of planning between the services.

US Army commanders and staffs accomplish MDMP to generate an order each time they face a planning problem. "Commanders with an assigned staff use the MDMP to organize their planning activities, share a common understanding of the mission and commander's intent, and develop effective plans and orders" (FM 5-0 2005, 3-1). The JFACC also accomplishes planning to produce orders that detail the conduct of the air campaign. There is a slight difference that should be noted in the structure of the US

Army warfighting organization as compared to the US Air Force's method. The Army's structure supports a strategic level of planning, usually at the Combined Forces Land Component Commander echelon. This level of command generates orders using MDMP and then translates responsibility down to the division level, which has a more operational focus. After another iteration of MDMP at the Division level, an order goes out to subordinate commanders at the Brigade Combat Team. Using MDMP, they in turn analyze their mission and produce a solution in the form of an order. Therefore, MDMP functions at the strategic, operational, and tactical levels.

In an AOC however, the echelons of command are slightly different. The tenant of centralized control means that planning is conducted on the strategic, operational, and tactical levels within the AOC under direction of the JFACC. The JAOP is the order produced to solve the strategic problem. The AOD is the order produced to solve an operational level problem. And finally, the MAAP produces the air tasking order (ATO) which begins to solve a tactical level problem. While the JFACC is ultimately the commander that approves each of these orders, he is planning and operating at multiple levels of war simultaneously.

Given this construct, the comparison made in this paper seeks to examine MDMP on its own, and then looks to apply it three times in the AOC; first in the JAOP, then in the AOD, and finally in the MAAP planning processes.

Assumptions

This thesis assumes several factors to frame the discussion and provide a baseline for comparison. The AOC processes are those described and proscribed in Air Force Instruction (AFI) 13-1AOC Volume 3 and the *Joint Air Estimate Planning Handbook*.

Likewise, Field Manual (FM) 5-0 provides the foundation for discussion of the MDMP doctrine. The AOC is relatively immature in form and function. AFI 13-1AOC and associated tactics, techniques, and procedures (TTPs) are the US Air Force's first attempt at standardizing the AOC's processes. As combatant commands refine their AOCs to look like the prescribed model, they may contain "nonstandard" processes. Likewise, Army units use different standard operating procedures and commander preference may alter the form and use of MDMP. While these remain important within individual AOCs and Army staffs, it is necessary to focus on the model rather than chase specific instances of difference.

This thesis assumes time is available to employ the full planning cycles of both the AOC and MDMP. This assumption is necessary to explore the entire MDMP and AOC planning process. However, the thesis also examines planning in a time-constrained environment given the nature of the many contingency operations.

A final assumption is the adaptation of the US Air Force process to the Army's MDMP. The contemporary operating environment may drive newer planning models. However, MDMP provides a time-tested system. "The 1932 Staff Officer's Field Manual provided the US Army's first comprehensive command and staff doctrine on which today's staff procedures are based. The 1932 manual described staff functions, explained a five-step commander's estimate process, and provided detailed formats for operations orders" (FM 5-0 2005, vii). It also can be argued that by virtue of the US Air Force's history from the US Army Air Corps, current culture reflects that distant past.

Limitations

This thesis limits the planning cycle comparisons to the US Army and US Air Force models. While the US Navy uses a Commander's Estimate of the Situation, it is beyond the scope of this discussion. Joint planning processes will be brought into the discussion where warranted, but will not be a primary focus of this thesis.

A number of key terms are in the Glossary. Joint publications (JPs) provide the first resource for definition when possible. A quick glance shows that there are already some differences when using terms like "commander's intent" between service and joint publications. Analysis clarifies these terms when they pose a conflict in comparing the planning models.

Final Cautions

Working from the strategic to the tactical, this thesis explores ways to make effective and efficient planning and decisions in the AOC. Any officer who has worked with MDMP knows that it can be frustrating at times. The same can be said for planning an air campaign in the AOC. Today's contemporary operating environment presents even more stress into the planning cycle with its greater threat variability and quicker decisions required. This thesis attempts to remain impartial, look for commonality in the processes, and recognize the respective strengths and weaknesses inherent in the service processes. The expected payoff will be a better process and product by planning staffs from all services. In an age where Chief of Staff of the Air Force, General Moseley, is espousing "joint interdependence," any work toward a common understanding of planning processes and interoperability between the services furthers this "interdependence." "Working in the joint environment will force the Air Force to find new ways to work

together with sister services and to share resources that in the past they may not have. In fact, it wasn't until recently that interdependence between military services began to take on a more important role," says General Moseley (AF Print News 2005).

This thesis also recognizes the many levels of planning. Strategic, operational, and tactical level planning are all resident in the AOC. MDMP exists at all of these levels. Within the AOC, the JAOP, AOD, and the MAAP most closely represent the strategic, operational, and tactical levels of planning. Each of these levels is compared against MDMP at a similar level of war. MDMP will have the most applicability with the JAOP and AOD, and the least with the MAAP. While each is not complete in its transferability, important lessons are contained in the comparison with MDMP.

Planning in today's complex environment demands art as well as science. The US Army's MDMP is a tested model combining the science and art of planning. A comparison with several planning processes in the US Air Force's AOC may yield some commonality and be exploited toward a standardized and joint planning process. A close look at both methods may help the services to understand each other and result in a more coherent and focused prosecution of the JFC's direction.

CHAPTER 2

LITERATURE REVIEW

This chapter reviews relevant literature related to the topic of the US Air Force's AOC planning processes and the US Army's MDMP. This literature will provide the background and basis for comparison in research methodology and analysis for the question, Does the US Army's MDMP have applicability in the AOC planning process? These documents also support the questions, What are the strengths and weaknesses of the Army's MDMP? What are the decision-making processes in the AOC? What is a JAOP and how is it produced? What is an AOD and what planning model yields this output? and finally, How does the commander and staff plan the MAAP? This chapter defines the source and scope of current publications, articles, training materials, and Internet resources.

Overall, literature about the AOC planning process has new publications and concepts characterized by an attempt to define fully the emerging concept of an AOC. In contrast, the mature nature of the Army's MDMP is evident in literature. However, the environment of network centric warfare and collaborative information networks provide some current discussion of modifications to improve MDMP.

Thesis Specific Literature

No material available directly addresses the comparison of the MDMP and the JAOP, AOD, or MAAP. Rather than a specific comparison, most literature trends toward a joint planning process. Colonels Anderson and Slate compare and contrast service specific models and then fuse them into a joint planning process in their article "The Case for a Joint Military Decision-Making Process." The strength of the article with respect to

this thesis is the comparison at a macrolevel; however, it does not specifically address the JAOP, AOD, MAAP, or the AOC (Anderson and Slate 2003, 11-19).

Joint Publications

At the macrolevel, joint publications serve as the basis for many planning processes considered in this thesis. An understanding of joint doctrine is necessary even though this thesis will concentrate on the comparison of AOC planning and MDMP. Joint doctrine is required because the AOC, as a joint command and control node, references joint doctrine in its processes. JP 1-02 will serve as the baseline for all definitions where possible. Service specific definitions are described in FM 1-02, *Operational Terms and Graphics*, or the *Air Force Glossary*. JP 3-0, *Doctrine for Joint Operations*, lays out the estimate process which will serve as the basis for comparison of the AOC planning and MDMP. JP 5-0, *Doctrine for Planning Joint Operations*, carries the joint planning requirements further by describing the methods of deliberate and crisis action planning. This thesis will explore elements of both methods. JP 5-00.2, *Joint Task Force Planning Guidance and Procedures*, and JP 5-03.1, *Joint Operation Planning and Execution System, Volume 1, Planning Policies and Procedures* will also contribute to the joint planning process discussion.

Specific air planning joint publications begin with JP 3-30, *Command and Control for Joint Air Operations*. It is the primary reference for this thesis as it contains an in-depth discussion of joint air operations development and the joint air estimate process (JAEP). Some discrepancies exist in its identification of certain teams and processes within the AOC, but this is only due to the older June 2003 data. More recent Air Force publications contain updated processes and revised teams within the AOC. A

follow-on document to JP 3-30 expands the JAOP discussion. The *Joint Air Estimate Planning Handbook* published by the Warfare Studies Institute at Maxwell Air Force Base provides an academic course look from mission analysis through course of action (COA) selection and plan development.

Following the JAOP discussion, JP 3-60, *Joint Doctrine for Targeting*, gives guidance geared more towards the AOD and MAAP levels of joint targeting and air planning.

Air Force Planning Doctrine and Instructions

Several Air Force doctrine publications examine the AOC planning process. Air Force Doctrine Document (AFDD) 2, *Organization and Employment of Aerospace Power*, forms the basis for Air Force air campaign planning. This Air Force document outlines the form and function of the AOC. It is also useful for its JAOP development section and the objectives and strategy development discussion. AFDD 2-1, *Air Warfare*, continues the JP definition of JAOP and then discusses tools for joint air operations planning. The final AFDD used is AFDD 2-1.9, *Targeting*. Its discussion of “planned targeting” includes the phases Objectives and Guidance (AOD output) as well as Weaponnering and Allocation (MAAP output).

While slightly dated, the 2001 Air Force AOC CONOPS (Concept of Operation) outlines planning processes within the AOC. It is a baseline document, but lacks the specifics that have evolved in the AOC through the past few years. A current and comprehensive, AFI 13-1AOC, Volume 3, 1 August 2005, clearly defines inputs to and outputs from the AOC planning process. This document is the first attempt for a standardization of the AOC processes. Its strength of standardization still leaves the TTPs

of air campaign planning unfilled. It does make specific mention of the AOD being produced in accordance with procedures found in JP 3-30. It also points to some form of the planning process found in Air Force operational tactics, techniques, and procedures (AFOTTP) 2-3.2.

The closest that the US Air Force comes to replicating the fidelity of the US Army's MDMP is the TTPs outlined in AFOTTP 2-3.2, *Air and Space Operations Center*, 14 December 2004. This document provides the point of departure for this thesis' comparison of the AOC planning models and MDMP.

A collaborative forum was recently set up under an Air Force "Community of Practice" site. This is a repository for current briefings, training programs, and discussion forums for AOCs worldwide. The latest AOC news is found on this continually updated website. This thesis contains information placed on that website through publication date.

Army Planning Doctrine

FM 5-0, *Army Planning and Orders Production*, is the Army's comprehensive guide on the method and steps of MDMP. It "describes the steps of the MDMP and explains how commanders, staffs, and subordinate headquarters interact during planning. Additionally, [it] offers ways to shorten the process when planning in a time-constrained environment" (2005, 3-1). In addition to being a mature method of problem solving, the publication is recently updated and reflects the contemporary operating environment.

This thesis uses FM 6-0, *Mission Command: Command and Control of Army Forces*, to examine commander inputs to a planning process. Elements of mission command, intuitive decision making, and principles of control add depth and clarity to the discussion of air campaign planning.

FM 3-52, *Tactics, Techniques, and Procedures; The Targeting Process*, does contain many insights to the target planning from an Army perspective. However, its age (May 1996) strains its relevance to the discussion based on older concepts and terms. FM 44-100, *Air and Missile Defense Operations*, (May 1999), Appendix B, provides a specific application of MDMP to Army air and missile defense planning and contains parallels to specific factors involved in air campaign planning.

Articles, Reports, and Studies

One theme current in many journals and publications is the idea of a single COA to shorten the planning timeline. This idea is clearly outlined in “A Recognition Planning Model” by Schmitt and Klein. The US Army Professional Writing Collection also considers the subject (Ross et al. 2004, 6-10). Another trend in current literature is the discussion of information nets and collaborative planning. MDMP was based upon a commander and staff interaction. As evidenced in the AOC, collaborative planning is more relevant in today’s environment.

Summary

There is sufficient literature to provide a basis for discussion of the US Army’s as compared to the AOC planning process. The JAOP has the most specific literature directed toward it and therefore makes the comparison easiest. Current Air Force doctrine, CONOPS, TTPs are still emerging in the AOC. The literature and guidance available on the AOD and MAAP are confined to several specific Air Force publications. The Army’s MDMP is extensively written about with many application lessons learned and is easily a standard of comparison.

CHAPTER 3

RESEARCH METHODOLOGY

The US Air Force and US Army use extensive planning processes to devise courses of action utilizing military power to defeat an enemy and accomplish objectives. These planning processes, when held up side by side, compare with sufficient resolution to find similarities and differences that affect the outcomes of the processes. The commonalities suggest areas already understood by both services while divergences may have different meanings. Some differences exist because of the nature of the ground conflict versus air conflict. Other differences may suggest a difference in service culture. Finally, some differences will serve as learning points for each service to recommend changes to the process to strengthen it. The methodology of this thesis will point out commonalities to promote understanding of the sister service's planning process and will seek out differences that fall into the learning point category. With a common understanding, and improved planning by recognizing "best practices" in the other's process, Army and Air Force planners can be more effective in the joint fight.

Qualitative Measures

A set of qualitative measures will determine a baseline for comparison of MDMP and AOC planning in this thesis. These measures are timeliness, standardization, and a comprehensive consideration of the problem. Each of these terms has a specific connotation when used in this paper.

Qualitative Measures: Timeliness

Timeliness represents a qualitative measure when used in the context of this comparison. Time is a quantitative measure if reduced to physical measurement of

minutes or hours used to produce an order by a planning staff. In light of the planning process though, that is not necessary or feasible. It is not necessary because planning only needs to allow time for implementation and execution. Therefore, a plan done in one hour may not have any more utility than a plan done in twenty-four hours. As long as the subordinate organizations have sufficient time to react to the plan, it is successful. It is not realistic to compare MDMP against the AOC planning process with respect to time. There is no way to give the same problem to ground component and air component planners for a solution. Too many variables make quantitative timeliness infeasible. However, timeliness is a necessary aspect of the planning process when considered in a qualitative fashion. There is certainly a no-go point, where if the plan is not complete, it ceases to be actionable. Therefore, a planning process will be considered successful if it overcomes the hurdle of timeliness.

Qualitative Measures: Standardization

The second measure this paper will consider is the standardization of the planning process. Large organizations can find gains when they replicate a process across the entire organization. This is especially important when considering training. The US Army and US Air Force find high turnover in planning positions. A familiar process known by all using it can mitigate this disadvantage. The other advantage that standardization brings is repeatability. Given the same set of inputs, standardization logically allows the staff to come to a repeatable solution. Obviously, this highlights the importance that inputs have in the process. One disadvantage of standardization may be its inclination to shape answers that fit its paradigm. A planning process that is flexible and robust enough to accept multiple decision paths balances this risk. While AOC planning processes are

standardized in AFI 13-1AOC and other publications, they each retain unique methods. This “standardization” is in contrast to the standardization that MDMP demonstrates in its ability to be applied at multiple levels of warfare and at multiple levels of command. In this light, MDMP and the planning processes of the AOC will be evaluated with respect to the qualitative measure of standardization.

Qualitative Measures: Comprehensiveness

The final measure to be used is the ability of a planning process to cover a problem comprehensively. Military planning has become more complex in recent years and planning systems have grown to accommodate this fact. MDMP and the AOC planning processes have varying degrees of proscribed procedures to follow. The output of these military planning sessions is a COA. A comprehensive look at the problem yields a feasible, acceptable, suitable, complete, and distinct COA for the staff to recommend to a military commander. This measure of comprehensive problem solving does not presuppose that the “answer” is correct. That fact can vary with the inputs and ability of the staff to think critically and creatively reason. Instead, this thesis will compare only the process to find the level of its consideration of the whole problem.

All three of these measures are to a degree qualitative judgment calls. The reader must to decide whether the qualitative “score” is correct and if the measure receives the appropriate weight. The qualitative measures form the questions to be answered, while the structure is a simultaneous comparison.

Joint Air Estimate Process versus Military Decision-Making Process

The JAOP is the output of the JAEP. The JAEP is a strategic and or operational look at the military problem from an air campaign level. An in depth discussion of the

JAEP will serve as the basis to describe its nature and bring forth salient details about its planning process. Next, an in depth description of MDMP will serve a similar function and then sets up a comparison of the two methods. The measures within this section provide grading criteria for evaluation.

Air Operations Directive versus Military Decision-Making Process

The AOD is the operational output of the Strategy Guidance Team within the AOC. While the JAOP is more strategic in nature, the AOD is generated from a process that is more operationally focused. In fact, it is a translation of the JAOP into a daily (or weekly) plan of the air campaign. Again, MDMP will serve as a comparison mechanism but dissection will not be in such detail as the previous section. Again, comparison will focus on salient points within the framework of the three grading criteria.

Master Air Attack Plan versus Military Decision-Making Process

The MAAP is the final AOC process to be examined in this paper. It is the most tactically focused planning process in the AOC, but it still retains many operational level considerations. The MAAP process details provide a comprehensive look at planning within the Combat Plans Division of the AOC. Viewed against the fundamentals of MDMP and evaluated using the three measures, the MAAP discussion will conclude the examples examined in the AOC.

Summary

This will be a qualitative analysis of four military planning processes. The measures of timeliness, standardization, and the comprehensiveness of each process form the basis for evaluation. The structure will be a comparison of the JAEP then MDMP for similarities, differences and learning points. Next, the AOD will be examined against

MDMP. Finally, the MAAP will provide insight in the planning process of the AOC in relation to MDMP.

CHAPTER 4

ANALYSIS

A side-by-side analysis of the US Army's planning tool, MDMP, and the planning mechanisms of the US Air Force AOC provides insight into decisions made by both military services. The planning process itself can shape the decisions made at all levels of conflict. MDMP is the first method described in this chapter. By way of comparison, the JAEP is the next process considered. The planning process that produces the AOD is the next considered against the backdrop of MDMP. Finally, the MAAP is described in detail and then held up against MDMP for analysis. These four planning processes contain many intricacies that affect the decisions made by the military commander. It is necessary to describe the planning processes in sufficient detail to recognize their commonalities and differences. Throughout the analysis, the examination of timeliness, standardization, and comprehensiveness form the basis of relative strength or weakness inherent in each process. When the analysis is complete, a comprehensive examination of the planning processes leads to recommendations and conclusions in the following chapter.

The Military Decision-Making Process

MDMP forms the basis for all staff planning in the US Army. Multiple echelons of command use MDMP to produce theater, campaign, and operational orders. The focus of this process is to produce a decision that considers many different ways to solve the problem, but chooses the most appropriate COA. "Army problem solving is a form of decision making. It is a systematic approach to defining a problem, developing possible solutions to solve the problem, arriving at the best solution, and implementing it. The object of problem solving is not just to solve near-term problems, but to also do so in a

way that forms the basis for long-term success” (FM 5-0 2005, 2-1). The US Army uses MDMP to lend structure to the planning process, but recognizes that decisions must account for a rapidly changing environment. This flexibility reflects the “art” of planning, while the structure of MDMP accounts for the necessary information consideration that is often termed the “science” of military planning. FM 5-0 explains this concept by saying, “Problem solving is both an art and a science. It is a highly structured analytic process designed to ensure that all key factors relevant to the problem are considered, and that all relationships between variables are anticipated and accounted for in the solution. This ensures that the desired objective or end-state is achieved in the most effective and efficient manner” (2005, 2-2). An outside observer of a US Army planning staff sees the familiarity of MDMP that Army officers possess. This standardization springs from the doctrine codified in FM 5-0 as well as the training imparted at almost every professional school. All levels of staff planning use MDMP extensively. The standardization across the force reaps benefits in many ways. First, it provides a systematic method to consider planning problems. “The highly structured nature of the Army problem solving process depicted . . . helps inexperienced staff officers to identify and consider key factors relevant to the problem. It also provides the more intuitively gifted and experienced officer with a framework for analyzing and solving complex problems” (FM 5-0 2005, 2-2). Second, the standardization allows a staff officer to function in the modular nature of any Brigade Combat Team or division staff. The effect is a common reference point for all planners regardless of the local standard operating procedure or personal preference of a unit commander.

US Army doctrine acknowledges that MDMP may not always be timely. “The MDMP is detailed, deliberate, sequential, and timeconsuming [sic]” (FM 5-0 2005, 3-2). To provide the standardization and comprehensive look at the problem, the length of time to execute MDMP is accepted. Multiple methods reduce the time needed to execute MDMP and are discussed later in this chapter. More importantly, “before a staff can effectively abbreviate the MDMP, it must master the steps of the full MDMP” (FM 5-0 2005, 3-2). This “mastery of the steps in MDMP” forms the necessity for a complete look at the seven steps of MDMP. FM 5-0 depicts these steps as a planning table shown in figure 1.

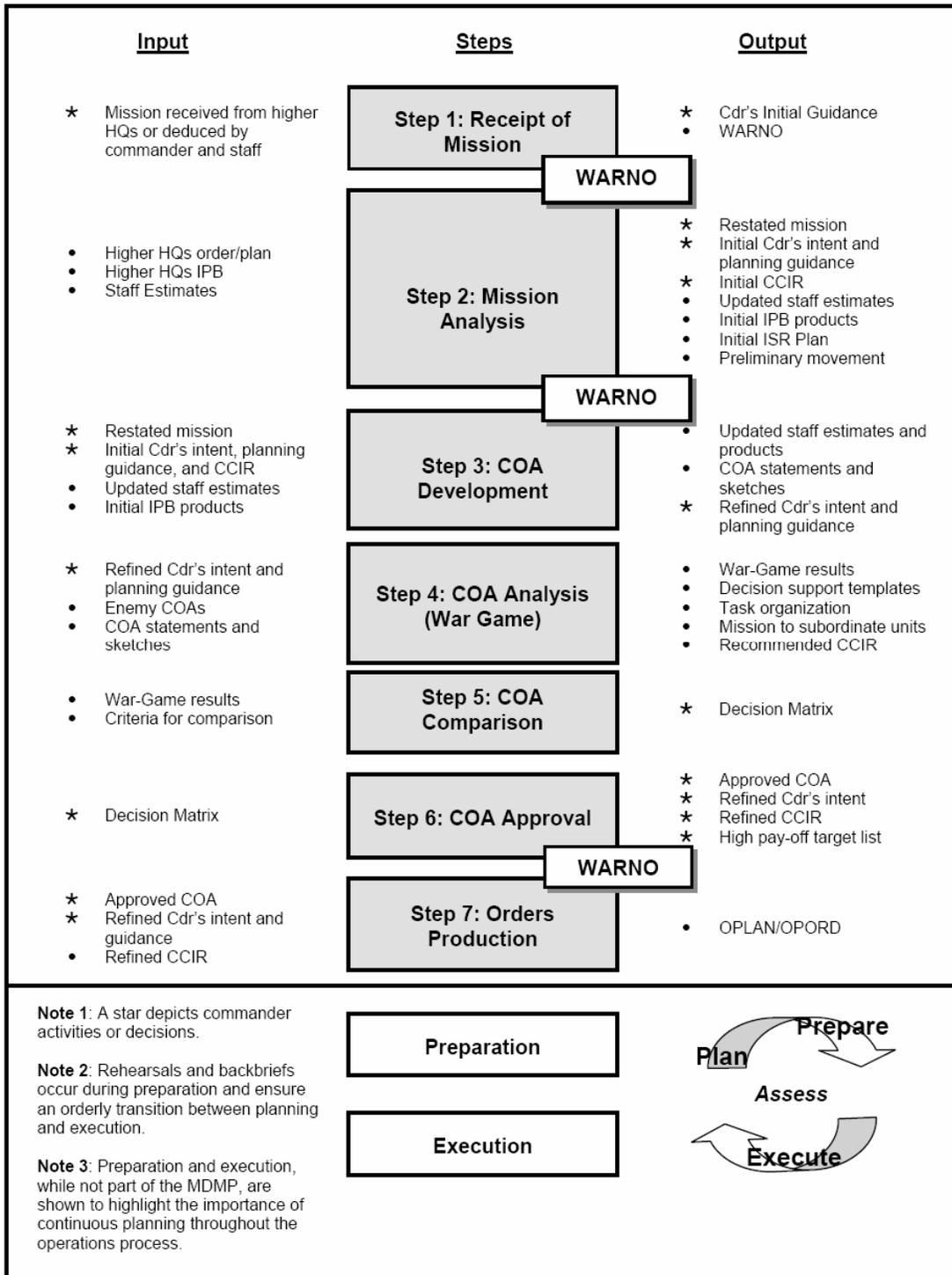


Figure 1. The Military Decision-Making Process

Source: Headquarters Department of the Army, 2005, FM 5-0, *Army Planning and Orders Production* (Washington, DC: GPO), 3-3; available from <http://www.adtdl.army.mil>; Internet, accessed on 12 February 2006.

Military Decision-Making Process: Receipt of Mission and Mission Analysis

The first two steps of MDMP give guidance to the planning process and begin the systematic consideration of the problem. The start of the planning process involves the mission assigned to the staff by a higher headquarters (FM 5-0 2005, 3-12). It is often a written document but may be the anticipation of tasking by the commander and staff given a developing situation. Figure 2 from FM 5-0 provides a bulletized overview of the receipt of mission phase.

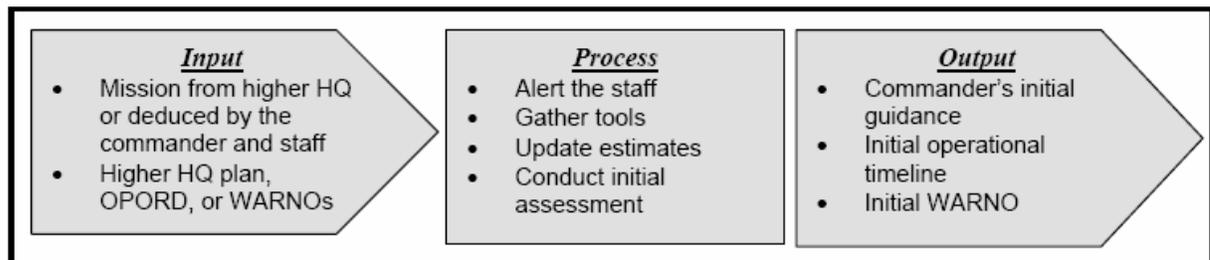


Figure 2. Receipt of Mission

Source: Headquarters Department of the Army, 2005, FM 5-0, *Army Planning and Orders Production* (Washington, DC: GPO), 3-12; available from <http://www.adtdl.army.mil>; Internet; accessed on 12 February 2006.

Within the process step, “alert the staff” and “gather tools” show the standardized and comprehensive nature of MDMP. Very little is taken for granted and this checklist approach can be considered a strength when used properly. The phases “update estimates” and “conduct initial assessment” refer to the ongoing process that an army planning staff accomplishes to gather data about the current situation (FM 5-0 2005, 3-13). It is an initial look and characterized by identifying the knowns and unknowns of the situation. Significantly, identified once again, is time as a restraint to be dealt with.

MDMP even details a table that lists suggested time allowed for staff planning before passing guidance and products to subordinate staffs for their planning and execution (FM 5-0 2005, 3-14). The final step for receipt of mission is a vector, given by the commander, that details time, coordination, tasks to the staff, and information requirements (FM 5-0 2005, 3-15). The involvement of the commander at this stage allows the staff to focus its efforts and in effect reduces the time required to plan. As an example, the staff allowed to plan without this input could easily continue unchecked in the wrong direction before brought back to the commander's intention. This interim time and effort may be wasted.

The second step in MDMP is mission analysis. Inherent in this step are the two measures of standardization and comprehensiveness. First, standardization enumerates seventeen steps within mission analysis. These steps break out the process into discrete elements. Second, the comprehensive nature of mission analysis is apparent when viewed as a whole.

A complete recap of mission analysis is not necessary to illustrate these points, and specific examples demonstrate the nature of this element of the planning process. Figure 3 consolidates all the steps of mission analysis illustrated in FM 5-0 (2005, 3-16). First, the sequential nature of MDMP links the outputs of the previous step to the inputs of the current one. In this way, standardization builds the structure of the planning process. Under the "process," Intelligence Preparation of the Battlespace (IPB) begins the comprehensive consideration of the problem. "IPB is an analytical methodology employed as part of intelligence planning to reduce uncertainties concerning the enemy, environment, and terrain for all types of operations" (FM 5-0 2005, 3-17). The focus is on

the threat or enemy within the area and the environment that both friendly and enemy forces must operate.

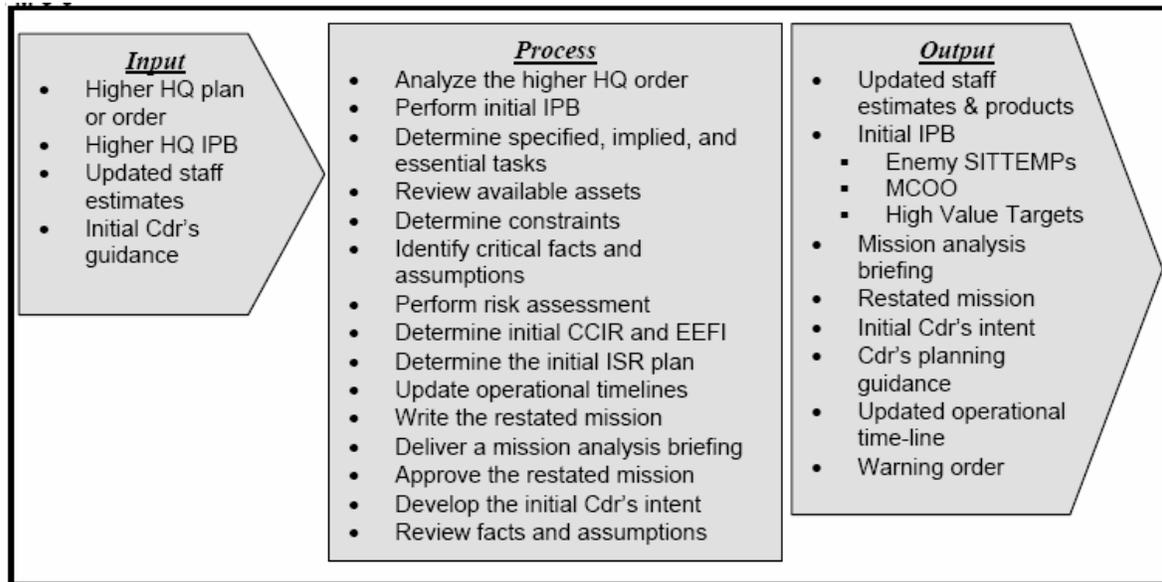


Figure 3. Mission Analysis

Source: Headquarters Department of the Army, 2005, FM 5-0, *Army Planning and Orders Production* (Washington, DC: GPO), 3-16; available from <http://www.adtdl.army.mil>; Internet; accessed on 12 February 2006.

Another key component of mission analysis is to identify “specified, implied, and essential tasks” (FM 5-0 2005, 3-18). These tasks represent a “to do” list for the unit. They inventory all actions to be completed. While the definitions of “specified,” “implied,” and “essential” are not necessary to this discussion, the comprehensive consideration of “what” needs to be done is. This is another example of MDMP’s thorough examination of a planning challenge.

The staff also considers assets available, constraints, facts and assumptions, and risks that occur within the mission (FM 5-0 2005, 3-19 to 21). Once all of these steps are

accomplished, the staff composes a restated mission that takes into account all of the previous considerations. “A *mission statement* is a short sentence or paragraph describing the unit’s essential task (or tasks) and purpose that clearly indicate the action to be taken and the reason for doing so. It contains the elements of who, what, when, where, and why, and the reasons thereof, but seldom specifies how” (FM 5-0 2005, 3-24). At this point, MDMP demonstrates its effectiveness. The problem as a whole is measured and distilled to the relevant considerations. Mission analysis concludes with a review by the commander and approval or modification (FM 5-0 2005, 3-19 to 21). This commander involvement again allows the process to focus before continuing. It effectually shrinks the time required to complete the planning process by reducing uncertainty that the plan will meet the commander’s expectations and intent. The mission analysis concludes with outputs of updated staff estimates, a mission analysis briefing, a restated mission and commander’s planning guidance (FM 5-0 2005, 3-16). These products form standardization in the execution of MDMP by providing structure. These products also lead to the next step of MDMP.

Military Decision-Making Process: Course of Action Development

The COA Development integrates the efforts of Mission Analysis into a systematic consideration of solutions to the restated mission. A COA defined is “a possible plan open to an individual or commander that would accomplish, or is related to the accomplishment of the mission” (JP 1-02 2005, 131). This step of MDMP represents another aspect of the comprehensive nature of the planning process. The generation of multiple problem solutions allows consideration of creative methods. MDMP reflects standardization in the planning process through the following tasks outlined in FM 5-0:

“Analyze relative combat power, generate options, array initial forces, develop the CONOPS, assign headquarters, and develop COA statements and sketches” (FM 5-0 2005, 3-29). Taken in sequence, these steps lead the planner to a set of solutions that provide the basis for comparison later on.

COAs screened in this phase use the criteria of feasible, acceptable, suitable, distinguishable, and complete (FM 5-0 2005, 3-29 to 30). COAs must pass all of these attributes be considered viable solutions to the restated mission. The step of “generate options” warrants consideration as an element of planning. Brainstorming is the preferred technique to develop ideas that solve the problem defined by the commander’s identified decisive (or primary) operation (FM 5-0 2005, 3-33). This method has the benefit of generating many options considered in depth at a later time. The strength is that a comprehensive set of solutions usually arises from this approach. Unfortunately, time may not allow an unconstrained search for solutions. “Since there is rarely enough time to do this, commanders usually limit the options in the commander’s guidance” (FM 5-0 2005, 3-33). While this is a negative influence in the comprehensive search for solutions, it is a required step to meet the measure of timeliness.

The next step in COA development is to develop the CONOPS. “The concept of operations describes how arrayed forces will accomplish the mission within the commander’s intent” (FM 5-0 2005, 3-35). FM 5-0 outlines twenty-four items to consider when developing the CONOPS (FM 5-0 2005, 3-35 to 36). The details are not important to this paper, but the number of consideration points again to the comprehensive nature of MDMP.

The output of the COA development phase is a graphical depiction or word description of the separate COAs and a briefing for approval by the commander. The aim of this briefing is once again an azimuth check by the commander. This facilitates the timeliness of the planning process and ensures that a comprehensive look is accomplished. Upon approval of COAs (or a single COA), the process of wargaming begins (FM 5-0 2005, 3-41).

Military Decision-Making Process: Course of Action Analysis

COA Analysis is the fourth step in MDMP. Another name for COA analysis is wargaming. At its heart, COA analysis is taking the proposed solutions and putting them through a sequence of trials to determine their strengths and weaknesses. “It includes rules and steps that help commanders and staffs visualize the flow of a battle. Wargaming focuses the staff’s attention on each phase of the operation in a logical sequence. It is an iterative process of action, reaction, and counteraction.” Again, the standardization of MDMP is evident in the steps of COA analysis.

The flowchart of COA analysis in figure 4 provides a visual depiction of the process. Of note are the items listed under “process.” Specifically, a review of available information precedes the selection of “evaluation criteria.” These criteria form qualitative and quantitative measures that grade each COA (FM 5-0 2005, 3-46). Another measure of the rigor involved in the MDMP process is the establishment of multiple methods of wargaming. “There are three recommended wargame methods: belt, avenue-in-depth, and box. Each considers the area of interest and all enemy forces that can affect the outcome of the operation” (FM 5-0 2005, 3-47). These three methods allow the user to vary the conduct of the wargame based on the knowledge gained in mission analysis. This

flexibility in testing each COA reflects a comprehensive nature of planning while respecting standardization. The standardization is evident in the proscription of wargaming methods. However, is not so rigid as to demand that one technique suit all scenarios.

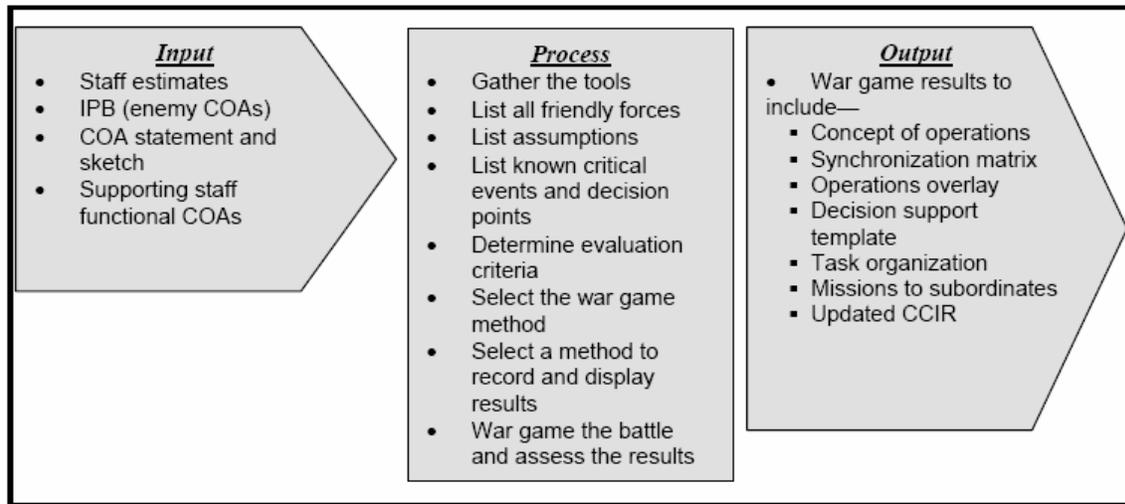


Figure 4. Course of Action Analysis (War Game)

Source: Headquarters Department of the Army, 2005, FM 5-0, *Army Planning and Orders Production* (Washington, DC: GPO), 3-43; available from <http://www.adtdl.army.mil>; Internet; accessed on 12 February 2006.

The last step in the COA Analysis process is to wargame the battle and assess the results. This allows the commander and staff to completely examine the COA solution and make modifications to improve the COA. “During the wargame, the commander and staff try to foresee the battle’s action, reaction, and counteraction dynamics. Identifying each COA’s strengths and weaknesses allows the staff to adjust them as necessary” (FM 5-0 2005, 3-50).

The result of wargaming is a comprehensive COA that accomplishes the mission statement. MDMP breaks this thought down into thirty-one separate issues that the wargame process achieves (FM 5-0 2005, 3-51, 2). In this regard, wargaming completes the process to develop each COA fully. The comprehensive process is therefore exhausted for each COA and the stage is set for a comparison of all COAs.

Military Decision-Making Process: Course of Action Comparison and Approval

The results of the COA wargame and the evaluation criteria combine to determine the preferred solution to the mission statement. This process is located in the fifth and sixth steps of MDMP, COA comparison and COA approval. Usually a matrix provides the structure for comparison and the advantages and disadvantages for each COA complete the table (FM 5-0 2005, 3-54). These steps of MDMP are reflective of the standardized nature in planning. The matrix serves as a commonly known tool to compare plans and assess their relative strengths and weaknesses. The familiar nature to most Army officers allows planning to proceed without having to redefine the method each time. In addition, COA comparison and approval also allow for the subjective nature of planning. Because the selection criteria are not limited, the best COA reflects what is advantageous to meet the requirements of the plan in the current environment. The final step in MDMP is the production of orders. While important to completing the process of military planning, it is an administrative function rather than a planning function and not discussed in this paper.

Military Decision-Making Process: Issues of Time

Because MDMP is such a deliberate process, one of its main drawbacks is the amount of time a full MDMP consumes. Recognizing rapidly changing situations and

problems, FM 5-0 devotes a significant section to accomplishing MDMP in a time-constrained environment. This discussion lends itself to this thesis's measure of timeliness.

The approach to shortening MDMP is to understand the full procedure first and then make deviations as required by the situation. "A unit can only shorten the process if it fully understands the role of each and every step of the process and the requirement to produce the necessary products" (FM 5-0 2005, 3-58). With this understanding, many of the steps are abbreviated by increased commander involvement, directed COAs, or limiting mission analysis. Of these three techniques, limiting mission analysis is the most problematic. As stated earlier, one of the strengths of MDMP is its standardized and comprehensive nature. Plan failure may result from limiting mission analysis and a missed piece of critical information in an effort to gain time. The abbreviated MDMP suffers from several shortcomings. "The disadvantages of abbreviating the MDMP are: It does not explore all available options when developing friendly COAs. It increases the risk of overlooking a key factor or not uncovering a significantly better option. It may decrease coordination and synchronization of the plan" (FM 5-0 2005, 3-59).

One of the most expedient methods of reducing workload and time consumption in MDMP is for the commander to direct a single COA for development. "Limiting the number of COAs incurs the risk of overlooking a significantly better COA. Developing only one COA is the most risky approach. It provides the staff with the least flexibility to apply its creativity and explore alternate COAs" (FM 5-0 2005, 3-63). One way to mitigate this risk is to broaden the directed COA by allowing flexibility in branches and sequels (FM 5-0 2005, 3-62).

One final issue bears mentioning when talking about MDMP and time compression. MDMP relies on seven steps and a deliberate sequencing. “Each step begins with inputs that build on previous steps. The outputs of each step drive subsequent steps. Errors committed early affect later steps” (FM 5-0 2005, 3-2). This is another reason that staff officers attempting to shorten the sequence must have knowledge of the full process and carefully shorten the planning process. With steps conducted simultaneously, information sharing and updating becomes vital. FM 5-0 lends an example of this criticality. “In a time-constrained environment, the intelligence officer quickly updates the IPB based on the new mission and changed situation. . . . Because they [mission analysis facts] are the basis for wargaming, they must be constantly updated as new information becomes available” (FM 5-0 2005, 3-2).

In summary, the procedure of MDMP is a comprehensive method to planning a military operation. The steps, sub steps, rules, and techniques offer a standardized and detailed manner to consider planning. Recognizing the detailed and time-consuming nature of MDMP, US Army doctrine offers many time saving techniques to shorten the planning cycle. In total, MDMP offers a comprehensive, standardized, and timely method of planning.

The Joint Air Operation Plan and Joint Air Estimate Process

Before DESERT STORM, air planners have traditionally focused on the inputs to the battle: the number of aircraft, the numbers of sorties flown or the ordnance delivered. . . . This type of planning is still necessary, but should always be guided by more important answers to questions like, ‘*what effect must we achieve to meet the commander’s objectives?*’ (Warfare Studies Institute 2005, 5)

The AOC is a focal point for air campaign planning. It uses many different planning mechanisms. The JAOP is the highest-level plan that outlines an air campaign.

The JAEP is the mechanism to produce the JAOP. Unlike MDMP, the JAEP is confined to the AOC or Air Force Forces staff. It is not a process used by subordinate units or levels of planners. It is a planning process limited in doctrine to producing the JAOP. “The COMAFFOR/A-Staff/AOC team accomplishes almost all planning for the air component. This team may give supporting mission or package commanders some planning latitude, but a majority of air component support planning below the COMAFFOR/A-Staff/AOC team is in tactical execution, not operational implementation. Thus the scope of air and space planning spans from strategic to tactical levels” (AFOTTP 2-1.1 2002, 5-1). AFI 13-1AOC Volume 3 specifically tasks the Strategy Plans Team within the Strategy Division to “develop the JAOP, through the Joint Air Estimate and development of an operational concept for the conduct of air, space, and information operations” (AFI 13-1AOCV3 2005, 17).

The JAEP is very similar to MDMP in phasing. JP 3-30, *Command and Control for Joint Air Operations*, defines its outline while the *Joint Air Estimate Planning Handbook* used to teach the Joint Air Operations Planning course provides more detail.

“The air and space estimate process employs the same six-step process as the Joint Planning Model (reference JP 3-0 and JP 5-00.2, *Joint Task Force (JTF) Planning Guidance and Procedures*), but differs in both scope and perspective” (AFOTTP 2-1.1 2002, 5-1). Much like MDMP, the graphical depiction in figure 5 clarifies the JAEP.

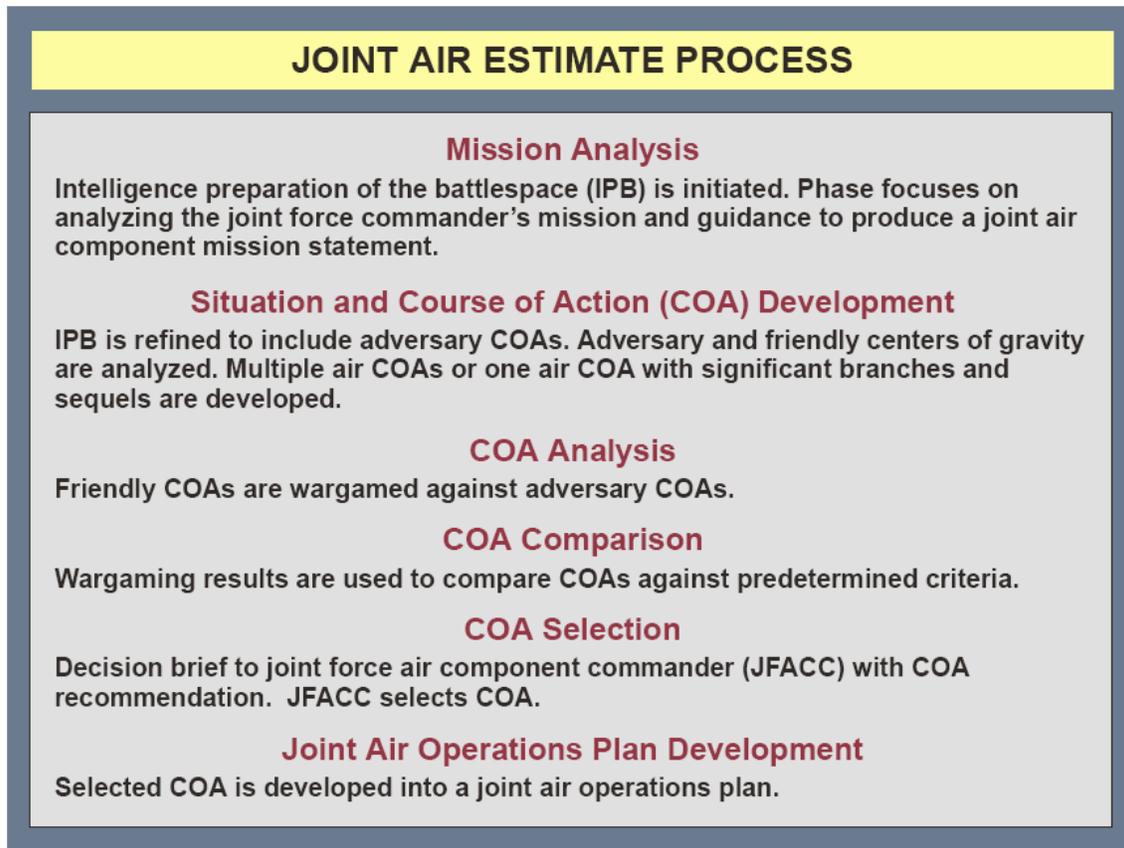


Figure 5. Joint Air Estimate Process

These six phases form the basis for comparison to MDMP. *Source:* Chairman of the Joint Chiefs of Staff, 2003, Joint Publication 3-30, *Command and Control for Joint Air Operations* (Washington, DC: GPO), III-4. Available from http://www.dtic.mil/doctrine/s_index.html, Internet, Accessed on 12 February 2006.

Joint Air Estimate Process: Mission Analysis

The first point of departure from MDMP is the lack of a Receipt of Mission step. While JP 3-30 ignores this step, the JAOP course advises planners to assemble theater campaign plans, task organization, intelligence and logistics estimates, relevant publications, applicable Operational Plans and Concept Plans, and other higher headquarters directives (Warfare Studies Institute 2005, 6). The course handbook also recognizes the receipt of mission as beginning of the planning process by stating, “The

Joint Air Estimate Process begins when you receive your tasking” (Warfare Studies Institute 2005, 5). The final point of comparison in the receipt of mission step is that the JAEP lacks an initial IPB to determine knowns and unknowns that MDMP suggests. However, this IPB is resident in the next phase of mission analysis.

Once JAEP mission analysis begins, it aligns itself closely with the mission analysis described in MDMP. “Mission analysis is critical to ensure thorough understanding of the task and subsequent planning. It results in the JFACC’s mission statement that includes the ‘who, what, when, where, and why’ for the joint air operation” (JP 3-30 2003, III-4). A determination of facts and assumption, specified and implied tasks, and IPB are all generated during mission analysis (JP 3-30 2003, III-5). These steps are almost identical with the steps accomplished in MDMP. Another point of departure is the JAEP’s process to produce the JFACC’s Mission Statement. Whereas MDMP details specified, implied, and essential tasks, the JAEP publications seem to point in different directions. JP 3-30 describes the process in terms of specified, implied, and essential tasks (2003, III-5). However, the more recently published *Joint Air Estimate Planning Handbook* describes this process in terms of air objectives (Warfare Studies Institute 2005, 11). The Air Force’s TTP document also places a very heavy emphasis on the enumeration of objectives. “Clear objectives from the JFC and COMAFFOR/JFACC tell airmen what they are expected to do and are the most critical element in planning and executing air and space operations. These objectives give clear direction to the air component and allows planners to properly plan air and space operations” (AFOTTP 2-1.1 2002, 4-1). This discussion may be as simple as saying that objectives and tasks are synonymous, but that probably simplifies the argument too much. More probably, the use

of air objectives points to the Air Force's utilization of Effects Based Operations (EBO) approach to planning. MDMP relies on the effective determination of essential task as much as the JAEP relies on the effective determination of appropriate air objectives. Commander's intent uses both concepts in its design. Doctrine and TTPs sufficiently standardize both methods in each service's planning process. Objectives and tasks are also comprehensive enough to start the planning process and flexible enough to accommodate different situations. Therefore, both methods are suitable. It is important for both Army and Air Force planners to recognize the difference in terminology though when planning in the joint environment.

The balance of documentation in the JPs, TTPs, and course handbooks give quick notice to restraints and constraints, risk, and end state. Given the concepts mentioned, the JAEP can be considered a comprehensive planning model, but it lacks definition in the implementation. The steps in MDMP flesh out these steps in much more detail and provide a measure of standardization not yet present in Air Force planning.

Joint Air Estimate Process: Situation and Course of Action Development

Situation and COA Development is the next phase of JAEP. This phase is a continuation of preparation began by the staff in mission analysis and then an exploration of COAs to meet the mission statement and commander's intent. MDMP makes the break with mission analysis and COA development much more distinct than the JAEP. MDMP counts its outputs as the restated mission, commander's intent, updated staff estimates and IPB products. On the other hand, the JAEP seems to finish the assembly of information during situation and COA development. "The purpose of IPB in this phase is to gain an [sic] thorough understanding of the theater, enemy and friendly forces and the

environment in which the conflict will take place” (Warfare Studies Institute 2005, 23).

While in a different sequence than MDMP, the IPB that is called for is very similar to that of the IPB required in MDMP. Figure 6 is a bulletized list of the required considerations.

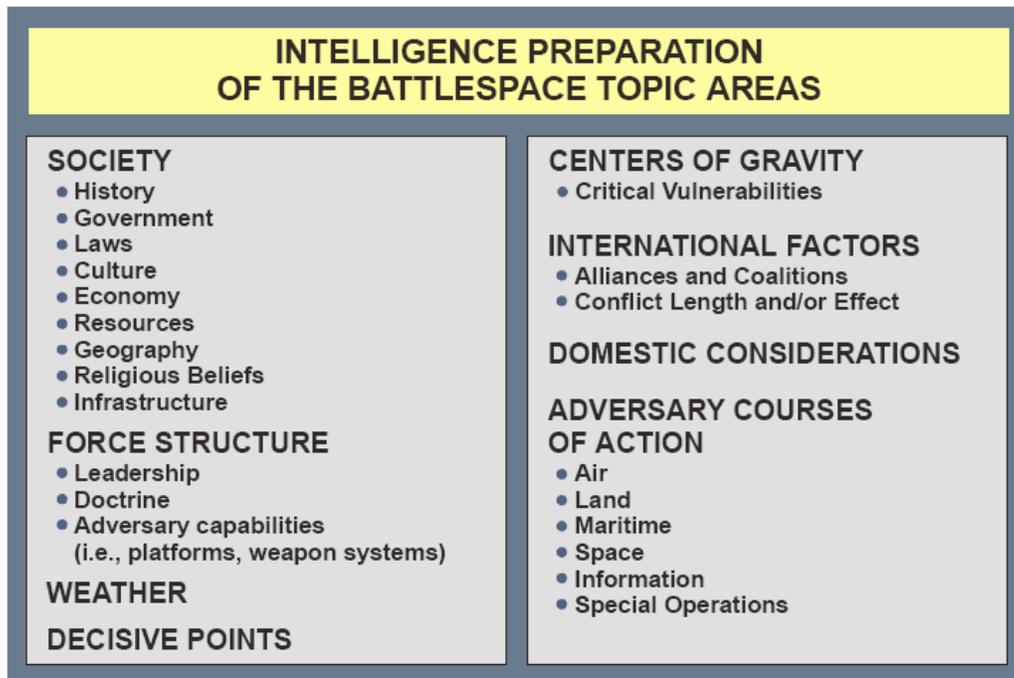


Figure 6. Intelligence Preparation of the Battlespace Topic Areas
This outline is a measure of the standardized and comprehensive nature of the JAEP.
Source: Chairman of the Joint Chiefs of Staff, 2003, Joint Publication 3-30, *Command and Control for Joint Air Operations* (Washington, DC: GPO), III-7. Available from http://www.dtic.mil/doctrine/s_index.html, Internet, Accessed on 12 February 2006.

The next step in Situation and COA Development is for the air planners to identify centers of gravity. This determination has some of the same elements of MDMP’s analysis of relative combat power, but it is a significantly more robust process. “The JFACC and staff prioritize the identified **adversary and friendly** critical

vulnerabilities based on the critical vulnerability's impact on achieving the objective in the shortest possible time and with the fewest resources" (JP 3-30 2003, III-6). The JAEP here seems to be at standardized least, but may show a deficiency in the sequence of planning that affects its ability to consider comprehensively the problem. MDMP places a heavy emphasis on getting as much information up front as possible and having it reviewed by the commander and staff in the Mission Analysis briefing. While it is naive to think that all information is available at that time, the effort made by MDMP to include that information earlier rather than later in the process may be more beneficial to the planning effort. Specifically, if centers of gravity were not agreed to before COA development, a significant amount of time and effort would be wasted on COAs that may or may not solve the strategic or operational planning problem. One explanation that documentation may offer is the attempt to plan quickly with the information given. "The six phases are presented in an order that is intended to optimize the process in a less than ideal environment: *very limited information and time available in an undeveloped theater*" (Warfare Studies Institute 2005, 6). Like MDMP the JAEP recognizes that time is a factor. By moving from mission analysis into situation and COA development, the two steps may be accomplished faster. However, the caution of FM 5-0 was that the commander and staff must first understand the full process and then seek to shorten by parallel planning and abbreviating steps. Simply running ahead of the sequence will often lead to uninformed decisions and a need to repeat steps. However, assuming the staff identifies the centers of gravity, the planning effort moves onto the development of options outlined as COAs.

The concept of a COA is essentially the same as the MDMP version. “SPT [Strategy Plans Team in the AOC] bears responsibility for continuously developing COAs enabling air and space operations to meet the JFC’s desired end state and in response to campaign demands in the form of branches and sequels” (AFOTTP 2-3.2 2005, 3-22). Air COAs must also meet the screening criteria of feasibility, acceptability, suitability, completeness, and distinguishability (JP 3-30 2003, III-11). Another area where the JAEP differs from MDMP is the expanded step in EBO that determine operational objectives with success indicators, tactical objectives with success indicators, and tactical tasks with measures of performance. “Operational objectives are supported by tactical objectives that are, in turn, supported by tactical tasks. Tactical objectives define the desired tactical effects that once achieved will produce the desired operational effect” (AFOTTP 2-1.1 2002, 5-11). This step is necessary in the development of the JAOP as it sets the stage for targeting effects by lethal and non-lethal means. Air COAs will necessarily satisfy all of the operational and tactical objects outlined in the same way that MDMP COAs must complete all of the identified specified, implied, and essential tasks.

The results of Air COA development are one or more concepts that achieve the objectives while satisfying commander’s intent. Like MDMP, limiting the number of COAs developed or focusing on one COA with a series of branches or sequels shortens the process. The JAEP phase of Situation and COA Development also reflects a rigor in the comprehensive consideration of the problem. While some standardization is still confusing between steps in the JPs, Air Force TTPs, and course handbooks, most of the process exists in sufficient detail to proceed methodically with planning. “COA analysis

concludes when planners have refined each plan in detail and identified the advantages and disadvantages of each COA” (JP 3-30 2003, III-13). Now the stage is set to exercise the options generated by the planners.

Joint Air Estimate Process: Course of Action Analysis

The COA analysis describes a comprehensive look at each option generated by the Strategy Division of the AOC. It puts the COAs up against the enemy in the environment determined by mission analysis. “Although war gaming usually involves tactical level consideration, the challenge in the Joint Air Estimate Process is to wargame strategic and operational level courses of action” (Warfare Studies Institute 2005, 45). AFOTTP 2-1.1 contains an extensive checklist on tasks accomplished during wargaming COAs. They include; gather the tools and data, listing assumptions, identifying known critical events and decision points, choosing a method for wargaming and displaying the results, executing the wargame, assessing risk, and then describing in detail the results of the COA analysis (AFOTTP 2-1.1 2002, attachment 4). It closely mirrors the same procedure in MDMP and institutes the same comprehensive approach to examining each aspect of the COAs. The strength of the process lies in its ability to use information produced during IPB and apply it to each of the COAs. This mini-rehearsal of the plan creates its own critical look at the COA. “Wargaming is often the most valuable step in the estimate process since it stimulates ideas and provides insights that might not otherwise be discovered. It also provides the initial detailed planning while determining the strengths and weaknesses of each COA” (AFOTTP 2-1.1 2002, 5-16).

The checklist approach of the Air Force TTP also lends itself to a standardized approach to the process. Time available will certainly have an influence on the detailed

examination of each COA, but a time-constrained approach may look at the COAs with less depth. Once the COAs are fully developed and analyzed, the next phase determines which one will become the JAOP.

Joint Air Estimate Process: Course of Action Comparison and Course of Action Selection

The final two phases of the JAOP are COA comparison and COA selection. They are very similar to the equivalent steps in MDMP. The JAOP course teaches four steps in comparing COAs. Planners determine criteria to evaluate each COA, propose a construct for evaluation, rank the COAs against one another, and then determine the best and recommend that to the commander (Warfare Studies Institute 2005, 49). The handbook also outlines several methods of comparison (decision matrix, advantages and disadvantages matrix, and risk timeline). Planners can use the method that most suits the situation or commander's desire. Like MDMP, COA comparison has a standardized structure and a comprehensive method to consider the planning process.

COA selection is admittedly a relatively simple step if all the previous phases are complete. "Based on the amount of JFACC involvement throughout the planning process and the degree of parallel planning the commander accomplishes, COA selection will vary from choosing among alternatives to direct approval of the staff-recommended COA" (JP 3-30 2003, III-14). Again, the measure of timeliness becomes a factor. Like MDMP, the JAEP advocates more commander involvement if there are significant time-constraints on the planning cycle. This allows for quicker plan production by limiting unfocused planning efforts that are not in line with commander desires. The standard caveat applies that creative solutions may not be developed if no alternatives to the current idea are generated.

Following selection, the COA transforms into a JAOP during the JAOP Development phase of JAEP. This plan becomes the baseline plan for the conduct of the air campaign. “JAOPs should be presented as a formal five-paragraph order and may be supported by a graphic presentation. Once the JAOP is approved, it becomes the overarching guidance for theater air and space operations. Within the daily JAOC battle rhythm, the Strategy Division (SD) references the JAOP when developing the JFACC’s daily Air Operation Directive (AOD)” (AFOTTP 2-1.1 2002, 5-19).

The Air Operations Directive

The next planning process in the AOC is the AOD. The AOD is a planning document that details the daily strategy of the air campaign. The AOD is the JFACC’s next lower level plan that takes the long range strategy of the JAOP and begins to narrow it down into daily (or periodic) strategy at the operational level. “Ultimately, the JFACC expresses guidance for the ATO period not later than 60 hours from guidance release through the AOD. Furthermore, JFACCs expect tactical units to review the AOD to better understand intent and scheme of maneuver” (AFOTTP 2-3.2 2005, 3-35). The planning process of AOD development is not as structured as the JAEP, but still reflects several distinct steps.

The Strategy Guidance Team uses the JAOP to draft a daily commander’s intent for air assets for the JFC and JFACC. Another input to the process is the air apportionment recommendation. The Strategy Guidance Team writes the commander’s intent, scheme of maneuver and makes any changes to the operational objectives, tactical objectives, and tactical tasks that are required based on the current state combat. Once this working group session is complete, the JFACC approves the information presented

(AFOTTP 2-3.2 2005, 3-36). This step is comparable to MDMP's receipt of mission step. The AOD receipt of mission lacks the structure of MDMP if only because of the number of inputs to the system. Still, it places emphasis on careful consideration of the planning problem and works within time constraints to accomplish the task. One criticism of the process is that the scheme of maneuver determination comes before the full consideration of information in mission analysis.

The next step in AOD development is a consolidation of the information prior to planning. This phase most resembles the mission analysis phase of MDMP. The following tasks all flow from the sequence outlined in AFOTTP 2-3.2 (2005, 3-36 to 38). First, the Strategic Plans Team briefs the long-range plan as a review of the relevant parts of the JAOP. Next, an intelligence officer briefs the applicable current enemy actions and expected enemy COAs throughout the AOD planning period. In addition, the intelligence officer recommends intelligence-gathering requirements. The third task is to get a full situation update from the Battlefield Coordination Detachment and other service component liaisons. The final step outlined in AFOTTP 2-3.2 is to coordinate with the information operations plan and public affairs officer to integrate any messages into the strategy (2005, 3-38). Once all of these elements are complete, the AOD goes to draft for the JFACC's signature.

The process of consolidation of information should provide the AOD more structure. With the JAOP mission analysis as a baseline, the updated staff estimates would contain current information and a full IPB conducted. One example is the lack of consideration of weather found in the MDMP and JAEP mission analysis. While AFOTTP 2-3.2 is the only document to put steps to the AOD planning process, it still

should be more prescriptive and comprehensive. This rigor in the process would lead to a more standardized and detailed process.

At this point, AOD planning is complete. Using MDMP and the JAEP for comparison, there is no COA development, analysis, and selection in the AOD planning process. There are two defenses of the current process for AOD planning. First, the commander is directly involved with the production of the AOD. Second, some may consider that the AOD is simply a Fragmentary Order of the JAOP. While commander involvement may reduce the necessity of different COAs, there is a benefit lost in not considering multiple options on accomplishing the objectives while meeting the commander's intent. An exploration of options creates a comprehensive look at alternatives and often generates better COAs or at least modifications to existing COAs. A refutation of the second argument (the fragmentary order nature of the AOD) points to the assumption that the JAOP remains relevant and detailed enough for the entire conflict. The JAOP contains the strategic level planning guidance. It is necessarily broad in nature and provides a good start point for the daily planning of the AOD. TTPs recognize this fact by saying, "With enough time and effort, the JAOP can detail tactical-level information. Yet as the conflict unfolds, the effort to provide such detail may prove irrelevant because the current tactical applicability quickly becomes moot in a changing and complex environment" (AFOTTP 2-1.1 2002, 5-18). Therefore, the AOD provides the flexibility and detail necessary to adapt to changes in the course of the conflict. The AOD is a lower level planning document and time sensitive in nature. It must use the JAOP as a baseline, but remain relevant to planning by continuously updating staff

estimates and creating multiple COAs for the JFACC to select which one best accomplishes the mission.

The Master Air Attack Plan

The MAAP is the final planning process in the AOC examined by this thesis. The MAAP is a complex plan that takes multiple inputs from strategy, resources, and intelligence then converts them all into a plan for execution. While it does contain some operational level planning, most of its effort is force packaging at the tactical level. “The MAAP is the JFACC’s time-phased air and space scheme of maneuver for a given ATO period and it synthesizes JFACC guidance, desired effects, supported component’s scheme of maneuver, available resources and friendly and enemy capabilities” (AFOTTP 2-3.2 2005, 4-26).

The MAAP begins with the synthesis of many pieces of information. It can be overwhelming without proper attention given to standardizing the process. The Air Force TTPs do not list distinct phases for the MAAP, but the first “phase” looks very similar to the MDMP step of receipt of mission and gathering the tools. MAAP preparation begins approximately two days prior to execution and involves a meeting with the MAAP team, the Strategy Guidance Team (briefs the AOD), the targets team (briefs the approved targets list), and members from the Combat Plans Division of the AOC (briefing expected sortie types and counts) (AFOTTP 2-3.2 2005, 4-36). This meeting concludes when the MAAP team chief has an understanding of the mission and commander’s intent. While the TTPs outline the members at the meeting and their function, much of the process is left to the imagination. Unlike MDMP or the JAEP, there are no clear steps or methods to this review of the mission. The individuals involved must generate the method for a

comprehensive look at the mission rather than relying on a standard process to guide them. While this probably works most of the time, it leaves gaps in training and standardization across the service.

The second phase in the MAAP process is analogous to mission analysis. This step focuses on the IPB and the gathering of all inputs to the process thus far. It can be visualized with figure 7 from JP 3-30.

One notable exception to this figure is the lack of the AOD as an input. This is in error with the current TTPs. JP 3-30 is slightly older than the other AOC documents and lists the JAOP as a source because this was originally the case several years ago. Another step in this phase is the continual updates to staff estimates. “Once the pre-MAAP meeting is complete, the MAAP team chief meets with cell leads to refine air and space scheme of maneuver, refine sortie flow and determine if/what higher guidance is required” (AFOTTP 2-3.2 2005, 4-36). This keeps the MAAP timely and relevant as the planning process progresses. Unlike the JAEP and MDMP, there is no need to back brief the JFACC on these updates as the information is being displayed in the Combat Operations Division of the AOC as they happen. It is only important that this data make it back into the loop as the MAAP planners begin their task.

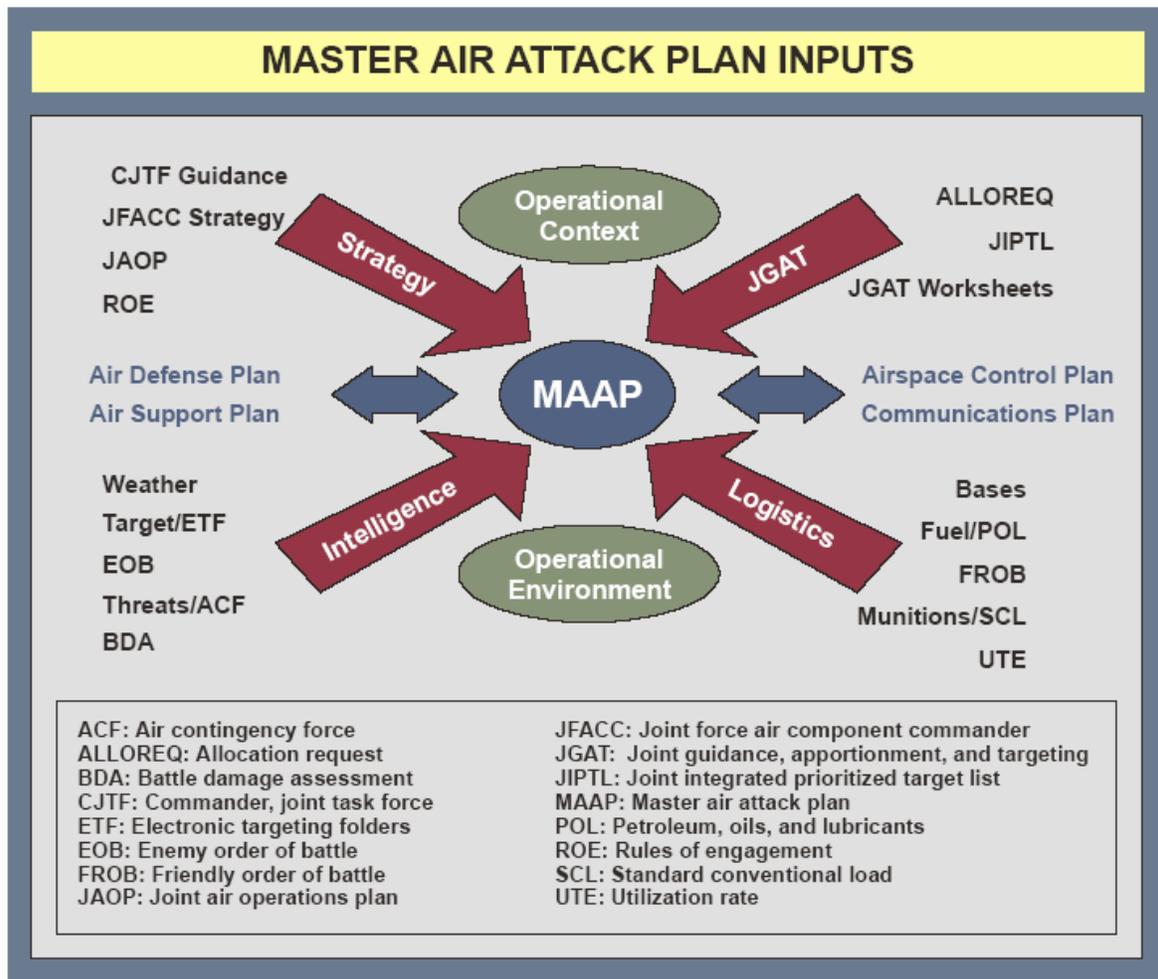


Figure 7. Master Air Attack Plan Inputs

Source: Chairman of the Joint Chiefs of Staff, 2003, Joint Publication 3-30, *Command and Control for Joint Air Operations* (Washington, DC: GPO), III-24. Available from http://www.dtic.mil/doctrine/s_index.html, Internet, Accessed on 12 February 2006.

Following this mission analysis, the MAAP creates a single COA. There are numerous cells within the MAAP team all concentrating on different mission types. Among these is the Force Application Cell. As an example, this cell must consider sortie flow, sortie package force protection, weapons loadout, ingress and egress routes and command and control (AFOTTP 2-3.2 2005, 4-62). All of the MAAP team cells attempt to optimize the single COA within their assigned mission type. This planning process

takes advantage of the expertise of the individual planners, but it does not allow multiple solutions to compete for primacy. In this manner, the MAAP takes a comprehensive look at a single COA, but does not give the JFACC a comparison of options to choose the best. It assumes the near perfect understanding and adherence to the guidance given from higher orders. It also assumes that the sum total of the individual decisions meets the intent of the commander. The point of failure in this process would be to complete the MAAP, go to the MAAP “decision” briefing, and have the commander reject the current MAAP. Without time or options left, there would be no acceptable plan.

To be fair, the task of creating a MAAP for a 1000 plus sortie ATO is time consuming enough. The idea of creating three or more fully developed COAs is unreasonable. However, one COA may emerge from several broad COA concepts early in the process and then be developed fully. This would allow for a more comprehensive consideration of the problem at hand and its possible solutions.

Given that time is of the essence at this stage of planning, there may exist a tendency to generate only one COA during the development of the MAAP. Schmitt and Klein’s “Recognition Planning model” suggests that this is an acceptable method of conducting planning (1999, 5). However, a second look negates their model in this instance. The MAAP is produced using multiple inputs, but with little commander involvement, especially during the critical time of concept development. A commander’s word early in the process has the ability to impart the leader’s visualization. Once that is set, an action officer can easily turn that visualization into a complete operational plan. Typically however, action officers generate the MAAP and then present it to the Combat Plans Division Director and, in turn, JFACC for approval. This violates the Recognition

Planning Model's intent for a vastly greater amount of commander involvement during the concept phase. In addition, the single COA approach (with multiple opportunities for branches and sequels) tends to funnel thought to one approach without the benefit of brainstorming that multiple COAs accomplishes. An important final thought is to note that the MAAP is never wargamed and loses rigor there as well.

For the purposes of comparison using current methodology, the MAAP process ends with the approval of the JFACC and plan production into computers to generate the ATO.

Summary

There are radical differences in the way the US Army and the US Air Force approach planning in a military environment. MDMP is a structured process that is applicable across levels of war and can be used by multiple echelons of command. The JFACC accomplishes planning using a variety of methods within the AOC that are specific to each step of the planning. This creates unique planning processes within the AOC. If the AOC were to adapt a standardized process, it may create gains in efficiency within the service and extending to members of other services that work in the AOC. Colonels Anderson and Slate advocate a joint planning process to address many of these same issues. While their conclusion was to adopt the US Navy's Commander's Estimate of the Situation as the baseline, the impetus for change remains the same. They are concerned that joint planning staffs do not function effectively and cite "varying experience and training in military decisionmaking is a significant factor, but there is more. The armed services do not yet have a joint military decisionmaking process (JMDMP) that exists in doctrine as well as at the execution level. Each clings to its own

parochial method of staff planning, and each approaches military-decisionmaking procedures in radically different ways” (Anderson and Slate 2003, 11).

This chapter analyzed the substance and overall process of MDMP, the JAEP, the AOD planning process, and the MAAP. The last three stood in comparison to MDMP. Each had strengths and weaknesses when judged using the measures of timeliness, comprehensive problem consideration and solving, and standardization. In general, MDMP and the JAEP stood firm in a comprehensive and standardized consideration of military combat planning problems. MDMP and the JAEP fought to keep the planning relevant by adhering to a timely schedule. On the other hand, the AOD and JAEP were expedient primarily due to a single COA approach with no wargaming. However, the AOD and JAEP may be lacking in a standardized and comprehensive approach to military planning problems. A qualitative comparison using the criteria stated leads to some observations and recommendations for improvement to each of these planning models.

CHAPTER 5

CONCLUSIONS

A qualitative analysis compared the planning process of the US Army's MDMP and the US Air Force's JAEP, the development of the AOD, and the MAAP. The primary question is, does MDMP have applicability in the AOC planning processes? That question was supported by secondary questions that explained each of the planning processes and compared the AOC planning processes back against MDMP. Timeliness, standardization, and comprehensiveness measures formed the basis of grading criteria. Each process demonstrated strengths and weaknesses in relation to each other.

The Military Decision-Making Process

MDMP is a fully developed planning process. It has the advantage of a very standardized form that is useful in many different planning scenarios. That standardization pays dividends when applied across the entire Army. Because most every planner is familiar with its execution, planners can focus on the substance of the problem and less on the method to an acceptable solution. MDMP also benefits from a complete method of considering problems. Its steps seek to understand the mission, gather all relevant information, propose multiple solutions, test the solutions, and then select the best. This sequence is very efficient at producing effective plans. This success is due to the comprehensive nature of MDMP. If MDMP has a fault, it is the time required to execute the entire process. Significant documentation describes methods to shorten MDMP without sacrificing its advantages. When applied correctly, these are usually successful. Taken as a whole, MDMP stands the test as an effective planning process.

The Joint Air Estimate Process

Of all the AOC processes, the JAEP produces the JAOP in the most similar method to MDMP. While not identical, its steps closely approximate MDMP's with much the same result. The JAEP carefully considers the mission and objectives given to the air component. It then uses inputs and staff estimates to build a comprehensive understanding of the environment, resources, and tasks. Finally, it generates multiple COAs, tests them, and then selects the most advantageous based on grading criteria. It is a comprehensive planning process. When compared to MDMP, the JAEP lacks some standardization. Its steps are not completely in sequence nor fully defined. This might reflect the rapid advances in JAEP development and the publications simply catching up in currency. Another positive step in standardization is the implementation of a schoolhouse for AOC training. This will synchronize AOC planners across the service to the doctrinal method of the JAEP. Finally, the JAEP is a timely process with methods identified to shorten its time allotted when required.

The Air Operations Directive

The AOD planning process reflects some element of MDMP, but in a much less obvious way than the JAEP. The mission analysis phase does not consider some key points. In practice, these are probably corrected, but the process documentation should stand up to reality. The most obvious departure from MDMP is the lack of multiple COA development, analysis, and selection. This may lead to a less than comprehensive consideration of solutions to the operational problem. While the directed COA is an alternative, it does induce some risk into the process. Standardization is also lacking in the AOD process. Clearer steps and inputs or outputs will result in less time spent

working through the process and more time spent efficiently solving the situation at hand. The AOD easily meets the standard of a timely plan. This may be more problematic if multiple COAs are considered as part of the process.

The Master Air Attack Plan

Of all of the planning processes considered, the MAAP is most unlike MDMP. The MAAP process meets the timeliness criteria of planning if conducted according to standard. As for standardization, the cellular nature of the MAAP team tends to fragment the sequential steps of MDMP. Like the AOD process, the MAAP fails to generate multiple COAs for consideration. This forces the JFACC into a full acceptance of the MAAP or conditional acceptance with only minor modifications possible. It is unrealistic to plan fully developed MAAP COAs, but concept COAs early in the process may help broaden the range of possible solutions to the conflict. In this regard, the MAAP comprehensively considers the problem, but the current process limits possible alternative solutions.

Future Research

A standardized, comprehensive, and timely planning model has benefits in the AOC. MDMP offers a standard of comparison to achieve this process. Future effort in exploring this concept should focus on two areas. First, is there another planning model that becomes the standard besides MDMP? The new JP 5-0 may be the correct vector for that effort. A theoretical model taught, and more importantly, used by all services would go a long way in achieving the benefits of standardization. All service planners would be able to operate more effectively in the joint environment of the AOC. The second effort is the revision of the tactics, techniques, and procedures of the AOC to reflect a common

planning process. While this may be a tedious task, it will certainly gain dividends as the model propagates throughout the weapon system. Air Force officers will learn one planning method and come to the AOC with a fundamental understanding of the planning process. The base knowledge forms a structure while the specific aspects of air campaign planning fills in the details.

Once a general method of planning is adopted, the JAEP, AOD development, and MAAP process will need to conform to the new model. AFI 13-1AOC and the AFOTTPs have gone a long way in laying out specific inputs, steps, and outputs that are required for proper AOC function. This can serve as a basis for the new planning model, but it will demand some change in procedures. In particular, the AOD and MAAP appear to be the most unlike other military planning processes. They lack the multiple COA development, comparison, and decision that typify other military planning processes. The AOD development and MAAP process would require extensive modification.

Finally, this thesis considered only three processes in the AOC. While they are significant planning events within the AOC, there are many more to consider. Once a standardized model, is adopted using MDMP as an example, all processes should be reviewed to ensure they adhere to the new standard. While this may initially create a large work effort to revise the processes, the benefits of standardization should quickly provide payback to the investment.

Summary and Recommendations

The US Army's MDMP has applicability in the planning processes of the AOC. MDMP successfully suggests that one standardized process is effective in multiple levels of planning. The JAEP, AOD, and MAAP will benefit from the standardization and

comprehensive problem consideration that MDMP exhibits. The US Air Force should implement a common planning process in the AOC. MDMP serves as an excellent model of a standardized and comprehensive planning process. The AOC planning processes should be translated into an MDMP-like structure. Once the procedures are solidified, publications should be revised and then used to instruct all AOC members in AOC training courses.

GLOSSARY

- Air tasking order. A method used to task and disseminate to components, subordinate units, and command and control agencies projected sorties, capabilities and/or forces to targets and specific missions. Normally provides specific instructions to include call signs, targets, controlling agencies, and others, as well as general instructions. (JP 1-02, 29)
- Airspace control order. An order implementing the airspace control plan that provides the details of the approved requests for airspace coordinating measures. It is published either as part of the air tasking order or as a separate document. (JP 1-02, 26)
- Allocation (air). The translation of the air apportionment decision into total numbers of sorties by aircraft type available for each operation or task. (JP 1-02, 31)
- Apportionment (air). The determination and assignment of the total expected effort by percentage and/or by priority that should be devoted to the various air operations for a given period of time. (JP 1-02, 41)
- Battlefield coordination detachment. An Army liaison provided by the Army component or force commander to the air operations center (AOC) and/or to the component designated by the joint force commander to plan, coordinate, and deconflict air operations. The battlefield coordination detachment processes Army requests for air support, monitors and interprets the land battle situation for the AOC, and provides the necessary interface for exchange of current intelligence and operational data. (JP 1-02, 64)
- Commander's estimate of the situation. A logical process of reasoning by which a commander considers all the circumstances affecting the military situation and arrives at a decision as to a course of action to be taken in order to accomplish the mission. A commander's estimate that considers a military situation so far in the future as to require major assumptions is called a commander's long-range estimate of the situation. (JP 1-02, 103)
- Concept of operations. A verbal or graphic statement, in broad outline, of a commander's assumptions or intent in regard to an operation or series of operations. The concept of operations frequently is embodied in campaign plans and operation plans; in the latter case, particularly when the plans cover a series of connected operations to be carried out simultaneously or in succession. The concept is designed to give an overall picture of the operation. It is included primarily for additional clarity of purpose. (JP 1-02, 112)
- Course of action. (1) Any sequence of activities that an individual or unit may follow. (2) A possible plan open to an individual or commander that would accomplish, or is

related to the accomplishment of the mission. (3) The scheme adopted to accomplish a job or mission. (4) A line of conduct in an engagement. (5) A product of the Joint Operation Planning and Execution System concept development phase. (JP 1-02, 131)

Fragmentary order. An abbreviated form of an operation order (verbal, written or digital) usually issued on a day-to-day basis that eliminates the need for restating information contained in a basic operation order. It may be issued in sections. It is issued after an operation order to change or modify that order or to execute a branch or sequel to that order. Also called FRAG order. (JP 1-02, 217)

Joint air operations center. A jointly staffed facility established for planning, directing, and executing joint air operations in support of the joint force commander's operation or campaign objectives. Also called Air and Space Operations Center, Air Operations Center, or Combined Air Operations Center (JP 1-02, 280)

Joint air operations plan. A plan for a connected series of joint air operations to achieve the joint force commander's objectives within a given time and joint operational area. (JP 1-02, 280)

Joint force air component commander. The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for making recommendations on the proper employment of assigned, attached, and/or made available for tasking air forces; planning and coordinating air operations; or accomplishing such operational missions as may be assigned. The joint force air component commander is given the authority necessary to accomplish missions and tasks assigned by the establishing commander. (JP 1-02, 283)

Master air attack plan. A plan that contains key information that forms the foundation of the joint air tasking order. Sometimes referred to as the air employment plan or joint air tasking order shell. Information that may be found in the plan includes joint force commander guidance, joint force air component commander guidance, support plans, component requests, target update requests, availability of capabilities and forces, target information from target lists, aircraft allocation, and others. (JP 1-02, 327)

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1. Certification Date: 16 June 2006
2. Thesis Author: Major David S. Drichta
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