

AU/ACSC/002/1999-04

AIR COMMAND AND STAFF COLLEGE

AIR UNIVERSITY

THE MILITARY DECISION-MAKING PROCESS: A
SOFTWARE TUTORIAL

by

Elton Akins, MAJ, USA
Hank Dodge, MAJ, USA
Colleen Duffy, MAJ, USA
Brian Gollsneider, MAJ, USA
James Imlay, Maj, USAF
Alan Neyland, MAJ, USA

A Research Report Submitted to the Faculty

In Partial Fulfillment of the Graduation Requirements

Advisor: LTC William Shurtz

Maxwell Air Force Base, Alabama

April 1999

Disclaimer

The views expressed in this academic research paper are those of the author(s) and do not reflect the official policy or position of the US government or the Department of Defense. In accordance with Air Force Instruction 51-303, it is not copyrighted, but is the property of the United States government.

Contents

	<i>Page</i>
DISCLAIMER	ii
PREFACE	iv
ABSTRACT	vi
INTRODUCTION TO THIS PRODUCT	7
Capabilities	7
Technical Considerations.....	8
CONCEPT AND CONTENT	9
AY99 Exercise Student Feedback.....	9
Concept	9
Content.....	10
MDMP Instruction and Synchronization Matrix	10
Exercises	11
References.....	11
Help Directory	12
SCENARIOS.....	13
Korea.....	13
Southwest Asia.....	13
CONCLUSION.....	14
GLOSSARY.....	15
APPENDIX A: TECHNOLOGY.....	19
BIBLIOGRAPHY	22

Preface

Today's world is one in which bi-polar relations are no longer the defining distinction. Yet though a general sense of "peace" between traditional adversaries now prevails, the sense of order that was inherent in a single-threat world has given way to a world situation marked by instability. It is in this instability that the United States finds her new threats, and with it, a call for a new focus in conducting military operations. Add to this uncertain and often tumultuous global situation the United States' broad scope of national and allied interests, and a dwindling military, it becomes clear that new national strategies will rely more heavily than ever on effective systems and procedures among its military forces. In short, the United States military, in fulfilling its national security objectives, must find better ways to do business, in potential involvement issues that run the gamut from major theater war (MTW) to Military Operations Other Than War (MOOTW). A failure to satisfy national directives in any area within this realm could well place the U.S. military—and subsequently the nation itself—at a precarious disadvantage for success.

With this in mind, it is paramount that all branches of the U.S. military be able to parry and thrust as a single body in conflict, to seize victory from the clutches of the foe, or to work as a combined services team as the peace-giver in MOOTW operations. To act in harmony, then, is for each branch to know the other's operational doctrine and practices in order to act together as a cohesive U.S. military team.

The common denominator to a united approach lies in the joint services' use of the Military Decision-Making Process (MDMP). It is the MDMP process which allows the production of comprehensive plans for commanders charged with operational responsibilities. This paper will outlay the purpose and application of the MDMP software tutorial.

The authors wish to acknowledge the guidance of LTC Bill Shurtz, Faculty Advisor for this paper. Also meriting mention is the ACSC AY98 student team who built the original MDMP tutorial foundation so that we might expand upon it.

All references within this text to "he," or "him" is meant as a neutral reference. No offense in the use of these terms is intended to the reader.

Abstract

This HTML-based tutorial provides a comprehensive and in-depth program of instruction on key Army concepts for the student. It may be used and easily understood by both the novice and the experienced, singly or in-groups. It is designed to operate over a number of popular browsers, with a final goal of running in a stand-alone configuration from a CD-ROM. It also hosts online features, such as hot links to informational web sites, if Internet connectivity is available. The software architecture allows easy modification of current scenarios and introduction of additional scenarios without major code rewriting. This course of instruction was produced over two generations of Air Command and Staff College student officers, with its target audience of both Army and other services' officers. A major emphasis of this project was to add a second scenario to the previous product. Its focus on a multi-MTW (Major Theater War) has direct applicability to the AWC/ACSC wargame, Tandem Challenge. The lesson hosts four main areas: Military Decision-Making Process; Exercises; Reference; and Help. This tutorial draws its references from the most current editions of Field Manual 100-5 [Operations] (June 1993), and Field Manual 101-5 [Staff Organization and Operations] (May 1997). This tutorial has been organized in a user-friendly manner to promote learning. A document outlining the software architecture and programming code is provided for future maintenance activities. The universality of this tutorial is assured, as all information herein is of a non-classified origin and approved for public distribution.

Chapter 1

Introduction to This Product

The Military Decision-Making Process (MDMP), once a process exclusive to the Army, is today becoming a universal planning methodology for all services under the joint umbrella. MDMP allows for a measured, comprehensive process that steers the planner in his thinking through solutions to dynamic situations. In this Army-designed software tutorial you will find explanations and examples of how the MDMP aids in planning at the operational level.

The foundation document for this tutorial is U.S. Army Field Manual 101-5: Staff Organization and Operations. It contains the steps outlined in the Military Decision-Making Process. Field Manual 100-5 (Operations) is also used as input to this product, and outlines operational capabilities of Army forces.

Capabilities

This tutorial was designed with an easy interface for the user utilizing an internet browser. It is built on four individual and distinct sections: Military Decision-Making Process, Exercises, Reference, and Help. Through a frame-based interface format, each of these sections is constantly available for instant access by the user. Screens have been designed for maximum readability and simplistic function. Standardized pull down options are included as overlays over each screen slide so that the user, once familiar with

the look and feel of the Graphic User Interface (GUI), may focus more on the MDMP instructional information rather than on the use of the program. Another feature is that this product can easily be used for either individual or classroom instruction.

Technical Considerations

For further information on product architecture, technologies, and suggestions for modifications, see Appendix A. It includes pertinent system requirement information, file system layout, and installation instructions. As well, a readme.txt file is included with the product for quick reference and help to users.

Designers used FrontPage Express as the product's primary design tool. This product runs on any commonly available browser. The user may provide their own browser when using this product; however, a browser is already included on the CD ROM, along with the product. Screen settings need to be set at a minimum of 640 by 480 pixels, with the browser maximized for full screen view.

This product extensively employs animated GIF files. Animated GIFs allow several advantages. First, they are extremely popular and well supported with well-known standards. This reduces the chance for problems that users will have using the product. Second, using GIFs instead of other technologies allows system administrators in the field to modify the product with a GIF editor.

Chapter 2

Concept and Content

AY99 Exercise Student Feedback

For the first time ever, Army students attending AY 99 ACSC presented the MDMP Tutorial software program designed by AY 98 Army students to the student class. The product was overhauled based on feedback from sister service officers, and from a comprehensive review of the program's functionality as both an in-class presentation medium and as an individual tutorial.

Concept

The intent of this product is to reinforce initial instruction through subsequent practice. In other words, learn first, apply second. Its contextual format is designed to accommodate anyone from the novice student to the experienced planner. It may be set up to teach a single individual or a group. It is styled for a logical, progressive sequence of one step to another, excluding excessive details that might confuse the first-time user.

Although the aim of this program is to teach the MDMP, the user may also wish to learn about the capabilities of the U.S. Army. The *Reference* section of the product includes an option for students to explore in depth the greater details of any particular item.

This tutorial offers the student two scenarios for consideration. In the first scenario, the student is asked to consider possible solutions—or courses of actions—through selection of pre-templated options. This is the “structured” method. The point here is that user input is simple and accommodating, much like the Air Force Exercise mission package-building software tutorial used at Air Command and Staff College.

In the second scenario, the student may elect to follow along in the structured, step-by-step review of the MDMP, or proceed in a “freeform” mode. In the freeform mode, the student creates his own course of action. In this case, the product does not provide a solution as in the structured option.

The use of pre-formatted solution templates allows the student to concentrate on learning the Military Decision Making Process itself, rather than having to focus on the process of using the tutorial software. The structured option approach streamlines the learning process by significantly reducing the amount of time the student spends inputting his solution. The student decides which option he desires selects it, and the product displays how his answer is put into effect. This display offers a “school solution.” By this, the student may understand how to approach the second scenario within the tutorial, but most importantly, he will begin to understand the comprehensive nature of the MDMP in problem solving.

Content

MDMP Instruction and Synchronization Matrix

A succinct, by-the-numbers approach to the MDMP in its entirety is provided in this section. Included in this section are COA Generation and Analysis, COA Development,

COA Comparison, and COA Briefing. A key component is the Synchronization Matrix, or Sync Matrix. The Sync Matrix is an incremental process technique which allows the planner to see by element across time and space the activities which take place in fulfillment of the overall mission objective.

Exercises

The warfighting focus of today's military rests on the premise of fighting the Major Theater War (MTW). Two MTW scenarios are offered in this section for the user's consideration. The first provides an example format for the student to gain an elementary understanding of how to use the MDMP. This beginning exercise uses a Korean theater scenario.

The product's second scenario, set in the Southwest Asia theater of operations, offers either a structured, step-by-step walk-through, or the freeform method.

References

The tutorial has a complete glossary of acronyms used in the program. The glossary listing is available in the Reference section and is accessible from any screen. A product feature allows the student a quick return back to the topic screen once the term in question has been located, read, and understood. The user may elect to print this acronym list to keep as he works through the program. The glossary listing also includes a basic military symbols graphics page. Within the Army section in this Reference section is included an explanation of Army branches and capabilities, plus a logistics section, as well as a summary of FM 100-5 (Operations). The Reference section contains a listing of web resource links; that is, related-topic area links to World Wide

Web sites that might be of interest to the user. It also includes additional off-line references from hard-copy libraries that are pertinent to the MDMP and similar topics.

Help Directory

Available on the opening screen of the program is a link to the Help Directory. It is recommended that the student first stop here for a quick review of usage rules. The help menu is easy to use and to understand, and is accessible from any screen within the tutorial.

Chapter 3

Scenarios

The MDMP software tutorial takes into account the varying experience levels of students using the program. As such, it has been designed to provide a general accommodation approach, from the novice to the experienced.

Korea

The Korean Theater scenario provides the student a step-by-step walkthrough using the MDMP during operational planning. Its sole aim is to familiarize the student with using the MDMP, and not on the most correct way to employ forces through tactics. As such, its simply designed, structured options format leads the student through the process and offers the “school solution” at the end.

Southwest Asia

The second scenario is set in Southwest Asia. The student has the option to work through the scenario using either the structured or the freeform option.

Chapter 4

Conclusion

This MDMP Tutorial should be a first step for the military planner in a joint operations environment to learning decision-making procedures for operational planning tasking. The MDMP methodology it contains provides the comprehensive framework for a joint force headquarters to use in campaign planning in both war and military operations other than war. Through an in-depth understanding of the military decision making process, today's joint planners will save time and, more importantly, conduct their operational planning from a comprehensive understanding of all pertinent aspects of objective accomplishment.

Glossary

AA	Assembly Area; Avenue of Approach; Air Assault
ABN	Airborne
ACR	Armored Cavalry Regiment
ACSC	Air Command and Staff College
ADA	Air Defense Artillery
AF	Air Force
AFB	Air Force Base
AG	Adjutant General
AI	Area of Interest
ALO	Air Liaison Officer
ANGLICO	Air Naval Gunfire Liaison Company
AO	Area of Operations
ASCC	Army Service Component Commander
AVN	Aviation
BDA	Battle Damage Assessment or Bomb Damage Assessment
BMNT	Beginning of Morning Nautical Time
C2	Command and Control
C2W	Command and Control Warfare
C3	Command, Control, and Communications
C4I	Command, Control, Communications, Computers, and Intelligence
CA	Combat Arms
CCIR	Commander's Critical Information Requirements
CDR	Commander
Cdr	Commander
CMD & SIG	Command and Signal
Cmdr	Commander
CML	Chemical
CMO	Civil-Military Operations
CMOC	Civil-Military Operations Center
CNR	Combat Net Radio
COA	Course of Action
CofS	Chief of Staff
CP	Command Post
CSA	Combat Support Arms
CSS	Combat Service Support

D+	Date an Operation Begins (“+” is the number of days after D-Day)
DOD	Department of Defense
DS	Direct Support (Maintenance)
DSA	Division Support Area
EA	Engagement Area
EEFI	Essential Elements of Friendly Information
EENT	End of Evening Nautical Time
ENGR	Engineer
EOD	Explosive Ordnance Detachment
EPW	Enemy Prisoner of War
FEBA	Forward Edge of the Battle Area
FFIR	Friendly Forces Information Requirements
FIN	Finance
FLOT	Forward Line of Troops
FM	Field Manual
FRAGO	Fragmentary Order
FSCL	Fire Support Coordination Line
FSCoord	Fire Support Coordinator
FSO	Fire Support Officer
G1-G6	General Staff Level Divisions
GS	General Support (Maintenance)
GS-R	General Support-Reinforced
HQ	Headquarters
HQS	Headquarters
HVT	High Value Target
ID	Identify
IEW	Intelligence and Electronic Warfare
IPB	Intelligence Preparation of the Battlefield
IR	Intelligence and Reconnaissance
JFC	Joint Force Commander
JSOTF	Joint Special Operations Task Force
JTF	Joint Task Force
JTFC	Joint Task Force Commander
KEYMAT	Keying Material
KM	Kilometer
LD/LC	Line of Departure/Line of Contact
LNO	Liaison Officer

MDMP	Military Decision Making Process
MI	Military Intelligence
MR	Motorized Rifle
MRC	Major Regional Conflict (now replaced by MTW)
MSRT	Mobile Subscriber Remote Terminal
MTW	Major Theater War (formerly MRC)
NBC	Nuclear Biological Chemical
OBJ	Objective
OPLAN	Operations Plan
OPORD	Operations Order
PIR	Priority Intelligence Requirements
PL	Phase Line
PM	Provost Marshal
PSYOP	Psychological Operations
(R)	Reinforced
RAU	Radio Access Unit
Recon	Reconnaissance
S1-S6	Battalion and Brigade Level Staff Divisions
SJA	Staff Judge Advocate
SOCCE	Special Operations Command and Control Element
SOI	Signal Operating Instructions (formerly CEOI)
SOP	Standing Operating Procedure or Standard Operating Procedure
SUPCOM	Support Command
SWA	Southwest Asia
SWO	Special Weather Officer
TACSATCOM	Tactical Satellite
TAI	Target Area of Interest
TBD	To be Determined
TBP	To be Published
TMD	Theater Missile Defense
TMDE	Test, Measurement and Diagnostic Equipment
TOC	Tactical Operations Center
TPL	Time Phase Line
TRADOC	Training and Doctrine Command (US Army)
TSA	Theater Support Area
TTP	Tactics, Technologies and Procedures
UAV	Unmanned Aerial Vehicle
USAR	United State Army Reserve

USJTF
WMD
WO

U.S. Joint Task Force
Weapons of Mass Destruction
Warning Order

Appendix A

Technology

Installation procedures:

Create a directory on your hard drive and copy the files in the AIP directory in it.

Run each of the following setup files (these files are also available through the help menu):

\\AIP\SETUP\SETUP.EXE (LOADS THE VB 5.0 RUNTIME, ARMEX2 AND ARMEX3)

\\AIP\SETUP\AXPLAYER.EXE (LOADS THE POWER POINT ANIMATION PLAYER)

\\AIP\SETUP\TB5-0\SETUP (LOADS THE TOOLBOOK RUNTIME FILES)

After completion, open index.htm with a browser.

Minimum System requirements:

Windows 95

70MB in installation directory.

2MB in \\windows\system directory.

Screen resolution 640x480 @ 256 colors (800x600 preferred)

Netscape 3 or Internet Explorer 4

Sound card recommended

Optional—Printer

CD-ROM or network access to CD-ROM required.

Internet access is recommended.

MDMP product directory layout:

admin: general index files

exercise: exercise files. Subdivided into Korea and SWA exercises

help: help information

mdmp: MDMP tutorial files

media: multimedia files. Subdivided into audio, media, and video

reference\THE ARMY: Army reference information

setup: setup files. Has TB subdirectory for Toolbook 5.0

2FUNDOP, 3ARTOP, 4 CONDOP, 5ENOP: FM 100-5 Information

Technology:

This product was developed for use in the field as well as for ACSC. As such, it was developed for the lowest common denominator of hardware and software using only basic HTML. This will minimize problems encountered by users. Frames have been used extensively throughout the project. Maintenance of the project can be accomplished by using any HTML editor. For example, a scenario can be added to this product by adding the information files in a directory under “\exercise” and a calling link on “\exercises\startexr.htm.” For completeness, “\admin\indexqck.htm” should also be edited to reflect the new scenario. Images are saved in JPG, GIF, or animated GIF format. These can be edited by an image editor. Several places in the project Power Point PPZ presentation files are used. These can be edited through PowerPoint. This

product uses relative links so it can be installed onto any hard drive directory, or run from a CD ROM, or a network drive, or even from an intranet, with minimal installation requirements on the user's computer.

Bibliography

- Air Command and Staff College, *Armyex2*. TOOLBOOK Computer Program. Maxwell AFB, Alabama, January, 1995.
- Air Command and Staff College, *OF524 Teaching Guide*. Maxwell AFB, Alabama, 1997.
- Air Command and Staff College. *Armyex3*. TOOLBOOK Computer Program. Maxwell AFB, Alabama, 12 October, 1997.
- Air University, *AU-8 The Army Into The Twenty-First Century*. Maxwell AFB, Alabama, 6 February 1996.
- American Photo*. Vol. VIII, No.1 (Jan/Feb 97).
- American Rifleman*. Vol. 145 No.11 (Nov/Dec 97).
- Army Advisory Group. *Army Toolbooks*. CDROM. Air Command and Staff College, Maxwell AFB, Alabama, 1996.
- Army Field Manual (FM 100-16). *Army Operational Support*. May 1995.
- Army Field Manual (FM 100-7). *Decisive Force: The Army in the Theater Operations*. May 1995.
- Army Field Manual (FM 100-7). *Decisive Force: The Army in Theater Operations*. 8 May 1995.
- Army Field Manual (FM 101-5). *Staff Organization and Operations*. 31 May 1997.
- Army Field Manual (FM 17-95). *Cavalry Operations*. 4 April 1997.
- Army Field Manual (FM 54-40). *Area Support Group*. 27 Jul 1987.
- Army Field Manual (FM 54-7). *Theater Army Logistics*. Feb 1980.
- Army Field Manual (FM 55-10). *Movement Control in the Theater of Operations*. 22 Jul 1986.
- Army Field Manual (FM 63-12). *Division Support Command*. 20 May 1991.
- Army Field Manual (FM 63-2). *Combat Service Support Operations-Division*. 21 Nov 1983.
- Army Field Manual (FM 63-20). *Forward Support Battalion*. 26 Feb 1990.
- Army Field Manual (FM 63-21). *Main Support Battalion*. 7 Aug 1990.
- Army Field Manual (FM 63-2-2). *Combat Service Support Operations*. 29 Oct 85.
- Army Field Manual (FM 71-100). *Armored and Mechanized Division Operations*. 13 Mar 1996.
- Army Field Manual (FM100-5). *Operations* June 1993.
- Army Greenbook*. Vol. 43 No. 10 (Oct 97).
- Army Greenbook*. Vol. 47 No. 10 (Oct 93).
- Army Greenbook*. Vol. 47 No. 8 (Aug 97).
- Army Logistics Management College, *Combat Logistics Handbook*. Mar 1996.
- Army National Guard*. On-line. Internet website. Available from <http://www-ngb5.ngb.army.mil/>.

Army Regulation (AR 611-101). *Commissioned Officer Classification System*, 30 September 1986.

Army School of Advanced Military Studies. *Point of Instruction: The Road to War, Scenario OPLAN 9-94*, AY 1997-98.

Army School of Advanced Military Studies. *OPLAN 9-94: X (ROK) Corps Operations Order*, AY 1997-98.

OASA(RDA), SARD-SI. *Weapon Systems*, United States Army 1998.

United States Army Publishing Agency. *Pam 600-3, Commissioned Officer Development and Career Management*, 20 October 1998.

Army Signal Command. On-line. Internet website. Available from <http://asc-www.army.mil/>.

Army Vision 2010. On-line. Internet website. Available from <http://www.army.mil/2010/>.

Art News. Vol. 96 No. 11 (Dec 97).

C/2/29 Infantry Regiment. On-line. Internet. Available from <http://www-benning.army.mil/fbhome/29thinf/C229.HTM>.

Department of the Army Pamphlet (10-1). *The Organization of the United States Army*. 14 June 1994.

Joint SOF Institute by Cubic Applications, *SOF Reference Manual*.

Life Magazine. (Oct/Nov 97).

Meet the Branches. On-line. Internet website. Available from <http://www.vanderbilt.edu/army/branches.htm>

Money. Vol. 26, No. 12 (Dec 97).

Quartermaster and Ft. Lee Home Page. On-line. Internet website. Available from <http://www.lee.army.mil/quartermaster/>.

Task Force Eagle. On-line. Internet website. Available from <http://www.tfeagle.army.mil/>.

The Combined Arms Doctrine Directorate Library. On-line. Internet website. Available from <http://www-cgsc.army.mil/cdd/admin/doc-lib.htm>.

The III Corps "Team of Teams". On-line. Internet website. Available from <http://www.hood-pao.army.mil/>.

The Army Ranger Training Brigade. On-line. Internet website. Available from <http://www.army.mil/RTB/rtbmain.htm>.

U.S. Army Reserve. On-line. Internet website. Available from <http://www.army.mil/usar/>.

U.S. Army Signal Corps and Ft. Gordon Home Page. On-line. Internet website. Available from <http://www.gordon.army.mil/home/>.

U.S. Army Training and Doctrine Command, On-line. Internet website. Available from <http://www-tradoc.army.mil/>.

United States Army Forces Command. On-line. Internet website. Available from <http://www.forscom.army.mil/>.

United States Army Soldier Systems Command. On-line. Internet website. Available from <http://www-sscom.army.mil/>.

United States Joint DOD Combat Command Center. *U.S. Forces In Somalia*. CDROM, n.d.

United States Joint DOD Combat Command Center. *US Forces in Bosnia - Vol. II*. CDROM, n.d.

USA Intelligence Center and Fort Huachuca. On-line. Internet website. Available from <http://huachuca-usaic.army.mil/>.

USMA: United States Military Academy. On-line. Internet website. Available from <http://www.usma.edu/>.

Welcome to the Victory Corps Home Page. On-line. Internet website. Available from <http://www.hq.c5.army.mil/>.

DISTRIBUTION A:

Approved for public release; distribution is unlimited.

Air Command and Staff College
Maxwell AFB, Al 36112