REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this 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 this 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 Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 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 any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

1. REPORT DATE *(DD-MM-YYYY)* 16-04-2013	2. REPORT TYPE Master of Military Studies Research Paper	3. DATES COVERED *(From - To)* October 2012 - April 2013
4. TITLE AND SUBTITLE MEB AND MEB RED TEAMS; REQUIRED CONDITIONS AND PLACEMENT OPTIONS		**5a. CONTRACT NUMBER** N/A
		5b. GRANT NUMBER N/A
		5c. PROGRAM ELEMENT NUMBER N/A
6. AUTHOR(S) Rega, Ronald J.		**5d. PROJECT NUMBER** N/A
		5e. TASK NUMBER N/A
		5f. WORK UNIT NUMBER N/A
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) USMC Command and Staff College Marine Corps University 2076 South Street Quantico, VA 22134-508		**8. PERFORMING ORGANIZATION REPORT NUMBER** N/A
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A		**10. SPONSOR/MONITOR'S ACRONYM(S)** N/A
		11. SPONSOR/MONITOR'S REPORT NUMBER(S) N/A

12. DISTRIBUTION / AVAILABILITY STATEMENT

Unlimited

13. SUPPLEMENTARY NOTES

N/A

14. ABSTRACT

The 35th Commandant of the Marine Corps' 2010 Planning Guidance directs the establishment of red teams at each Marine Expeditionary Force (MEF) and Marine Expeditionary Brigade (MEB). Conceptually, what a red team does seems straightforward and is clearly articulated in General Amos' guidance; however, how it executes its job is less obvious. In order to utilize this concept within MEF and MEB staffs, the following conditions must be present: organizational processes that integrate independent red teaming viewpoints; robust interaction between the red team and other staff sections within the organization; and independence to avoid being 'captured' by the bureaucracy. This enables the generation of relevant and timely red team input that aids decision making and influences how the organization views the problems it is facing. However, there are no accepted standards, formalized doctrine, or models available to guide future red teamers executing or commanders implementing this capability. This monograph introduces and analyzes five distinct red teaming models and proposes placement options for red teams at the MEF and MEB level. Recommendations are also made regarding future doctrine development, mission statement, red team task list, and integration of red teaming within the Marine Corps Planning Process.

15. SUBJECT TERMS

Red team; red teaming models; challenging organizational thinking; alternative perspectives; alternative analysis

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON Marine Corps University / CSC
a. REPORT Unclassified	**b. ABSTRACT** Unclassifed	**c. THIS PAGE** Unclassified	UU	56	**19b. TELEPHONE NUMBER** *(include area code)* (703) 784-3330

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std. Z39.18

United States Marine Corps
Command and Staff College
Marine Corps University
2076 South Street
Marine Corps Combat Development Command
Quantico, Virginia 22134-5068

MASTER OF MILITARY STUDIES

TITLE:

MEF AND MEB RED TEAMS:
REQUIRED CONDITIONS AND PLACEMENT OPTIONS

AUTHOR:

MAJOR RON REGA, USMC

AY 12-13

Mentor and Oral Defense Committee Member: _Benjamin Jensen PhD_
Approved: _____
Date: _16 APR 13_

Oral Defense Committee Member: _Rebecca Johnson_
Approved: _____
Date: _16 April 2013_

Executive Summary

Title: Red Teaming in the Marine Corps

Author: Major Ron Rega, United States Marine Corps

Thesis: Conceptually, *what* a red team does seems straightforward and is clearly articulated in the 35th Commandant's 2010 Planning Guidance; however, *how* it does its job is less obvious. In order to effectively utilize red teaming within MEF and MEB staffs, there must be organizational processes that integrate independent red teaming viewpoints, a robust interaction between the red team and other staff sections within the organization, and independence to avoid being "captured" by the bureaucracy. These conditions enable the generation of relevant and timely red team input that aids decision making and influences how the organization views the problems it is facing.

Discussion: The 2010 Commandant's Planning Guidance mandates the institutionalization of red teaming within resident senior enlisted and officer professional military education. Additionally, he directs the establishment of red teams at each MEF and MEB staff. Red team tasks include challenging an organization's prevailing notions; rigorously test current tactics, techniques and procedures (TTPs); and counter groupthink in order to increase organizational effectiveness, improve decision making, and aid in mission accomplishment. However, the lack of doctrine, acceptable standards, and a menu of placement options within MEF and MEB staff are creating institutional confusion and degrading the effectiveness of this concept. The red team is chartered with a completely different mission than any other staff section within the MEF or MEB staff; therefore, these staffs must understand the necessary conditions and placement options that enable effective red teaming. The purpose of this monograph is to analyze red team effectiveness utilizing case studies and introduce five distinct red teaming models that provide placement options for red teams within MEF and MEB staffs.

Conclusion: A greater understanding of placement options and conditions required for effective red teaming will help commanders and their staffs utilize this concept more effectively. These conditions facilitate red teaming and allow for timely and relevant input into the organization's critical processes. Ultimately, an organization that understands and embraces red teaming enhances its adaptability and organizational effectiveness. Finally, the Marine Corps requires red team doctrine and acceptable standards in order to overcome the institutional misunderstanding that is currently degrading the effectiveness of this concept.

DISCLAIMER

THE OPINIONS AND CONCLUSIONS EXPRESSED HEREIN ARE THOSE OF THE INDIVIDUAL STUDENT AUTHOR AND DO NOT NECESSARILY REPRESENT THE VIEWS OF EITHER THE MARINE CORPS COMMAND AND STAFF COLLEGE OR ANY OTHER GOVERNMENTAL AGENCY. REFERENCES TO THIS STUDY SHOULD INCLUDE THE FOREGOING STATEMENT.

QUOTATION FROM, ABSTRACTION FROM, OR REPRODUCTION OF ALL OR ANY PART OF THIS DOCUMENT IS PERMITTED PROVIDED PROPER ACKNOWLEDGEMENT IS MADE.

Illustrations

Table of Contents

Introduction

Effective red teaming will be much more influenced by a change in the culture of the enterprise than by attempts to institutionalize red teaming or putting someone in charge.
                    Defense Science Board Task Force, "The Role and Status of DoD Red Teaming Activities", 2003

MEF and MEB Red Teaming: Required Conditions

This study analyzes the conditions required for effective red teaming and employment methods through a case study analysis and provides placement options in order to enhance the red team's effectiveness and the organization's capability to accomplish its mission. Through this understanding, each Marine Expeditionary Force (MEF) and Marine Expeditionary Brigade (MEB) can make informed decisions in regards to the placement, focus, and tasks their red team will be required to accomplish. Additionally, this study addresses some of the most common obstacles red team members will face while conducting red teaming at the MEF or MEB level. With the Marine Corps' experience of the past decade in complex operations and its renewed institutional emphasis on thinking critically coupled with projected manpower reductions, conducting red teaming at the MEF and MEB level must be clearly understood and articulated in doctrine in order to ensure successful execution of this concept.

Conceptually, *what* a red team does seems straightforward and is clearly articulated in the 35th Commandant's 2010 Planning Guidance; however, *how* it does its job is less obvious.[1] In order to effectively utilize red teaming within MEF and MEB staffs, there must be organizational processes that integrate independent red teaming viewpoints, a robust interaction between the red team and other staff sections within the organization, and independence to avoid being "captured" by the bureaucracy. These conditions enable the generation of relevant and timely red team input that aids decision making and influences how the organization views the problems it is facing.

A clear understanding of how red teaming can be utilized at the MEF and MEB level is essential in order to effectively accomplish its mission to challenge prevailing notions; rigorously test current tactics, techniques, and procedures; and counter group-think. Ultimately, the following question needs answering: *How can the Marine Corps most effectively conduct red teaming at the MEF and MEB level in order to accomplish its stated purpose?*

In order to effectively utilize a red team, it is critical to understand the required conditions that need to be in place within an organization. Three conditions required to red team at an operational level staff include: 1) Organizational processes that integrate independent red teaming viewpoints; 2) A robust interaction between the red team and other staff sections within the organization; and 3) Independence to avoid being "captured" by the bureaucracy.[2] These three conditions enable timely generation of red team products that influence how the organization views the problems it is facing.

The first condition needed is organizational processes that integrate independent red teaming viewpoints. This allows the organization to seriously consider and act upon the output of the red team. This includes integrating red team products within the Marine Corps Planning Process through active participation in operational planning teams. Additionally, integrating the red team within working groups and senior level discussions provides it with valuable insight and enables the team to provide relevant and timely products and input for the organization. Red team products developed for problem framing, course of action development, and course of action war gaming are indicators of a red team effectively integrating into the critical processes of the MEF or MEB.

The second condition needed is a robust interaction between the red team and other staff sections within the organization. This interaction allows establishing a win-win environment in

which the organization gains a greater appreciation for the issues it is facing. A robust interaction between the red team and other staff sections facilitates a shared understanding and demonstrates to the organization that the team is not a threat; rather, it adds value to their efforts. Interaction between the red team and blue planners is accomplished in a number of ways, which includes discreet, professional feedback and a persuasive approach. This does not mean friction will not be produced because of a red team point of view; red teaming by its very nature creates friction. The red team is chartered to conduct a fundamentally different mission; therefore, this necessitates an understanding of the importance of personal relationships, and building those relationships as early and as quickly as possible. Therefore, a robust interaction and building personal relationships help the red team overcome organizational obstacles, and ultimately allow the red team to become more effective.

The final condition needed within an organization is red team independence in order to avoid being "captured" by the bureaucracy. This allows the red team the ability to be independent and not become subordinate to the organization or project it is challenging. The environment of the organization should not suppress the red team when challenging deeply held assumptions or offering new ideas. Additionally, the red team requires the flexibility to be utilized internally across the organization and externally to higher, adjacent, and subordinate units. This freedom of movement and independence is essential to provide horizontal staff integration, maintain situational awareness, and aid in decision-making. Overall, these conditions are necessary in order to ensure the red team is effectively utilized and can provide input that aids in decision making and influences how the organization views the problems it is facing.

Research Methodology

To understand and explore the different ways that red teaming can be conducted within an organization, this study conducts historical case studies of red team execution within the military from the inception of the Third Marine Air Wing fusion cell in 2004 through the present. Case selection is based on historical variance and difference in focus as well as red team placement within the organization. In analyzing the cases, the research will seek to determine what ways red teaming was integrated into the organization's processes, and what conditions were present within the team or within the organization writ large that allowed effective integration to take place.

Additionally, discussing the composition of red teams provides a better understanding of who served on these teams and how this may affect placement of the team within the organization. Size, diversity, and qualifications of red team members should be taken into consideration when deciding where the red team will be placed within the organization. While this is not the focus of the paper, it will help provide a better understanding for placement options based on the size and composition of the red team.

Finally, an alternative explanation is that access to the commander and the commander's interest in this capability are the only explanations as to how red teaming can be effective. Here, to control for this rival explanation, the analysis will also examine whether or not red teams had frequent, direct access to the commander and whether the leadership of the organization advocated for the concept. To the extent the thesis is proved, it opens up a discussion about how to position the red team among the staff in order to successfully conduct its stated job.

What is Red Teaming?

There has been wide debate on the negative effect of groupthink and mirror imaging in military planning and operations; specifically, an organization's ability to challenge itself and its norms in order to discover weaknesses before real adversaries do.[3] A recent example is the 2003 invasion of Iraq and subsequent insurgency, which highlighted the Bush administration's unwillingness to accept dissenting opinion and challenge its strategic assumptions.[4] The Defense Science Board Task Force on The Role and Status of Department of Defense (DOD) Red Teaming Activities produced a study in September 2003 highlighting red teaming as a powerful tool to "reduce an enterprise's risks and increase its opportunities."[5] Additionally, their recommendations include instilling red teaming within the Department of Defense, developing a red teaming best practices guide, and "making the subject of red teaming an intellectual endeavor to be researched and taught at the institutions of professional military education."[6] Overall, the capability of an organization to discover its weaknesses before real adversaries do mitigates the risk of failure in combat.

There are many perspectives and uses of red teaming. Many different organizations utilize red teaming including private businesses, governmental agencies, foreign militaries, and the US Department of Defense. Historically, red teaming, in the form of a "red cell", was utilized to represent enemy forces in maneuvers and exercises.[7] As it progressed through history, red teaming meant "the willingness to establish independent teams or other means to challenge the assumptions and preconceptions that one's own forces often make during prolonged periods of peace."[8] Red teaming has also been described as a bright light we shine on the organization to expose areas where we can improve effectiveness. The light starts out white but takes many forms in its application as it goes through the prism of the particular

organization.[9] Red teaming is largely an intellectual process that requires its members to possess creativity and an understanding of the barriers and symptoms of poor thinking.[10] Common to all of these perspectives and uses is the requirement to challenge the organization by providing alternatives in order to improve decision making and achieve the end state.[11] Although red teaming is not process driven, it is imperative that the team understands the Marine Corps Planning Process in order to contribute to effective decision making. Integration between the red team and the critical staff processes of the MEF or MEB is essential in order to ensure this capability is used to its fullest.

Utilizing the 35th Commandant's Planning Guidance as a starting point, a MEF, or MEB red team provides the capability to challenge prevailing notions, counter groupthink, and present independent perspectives in order to enhance decision making. The red team is designed to do the following: provide independent perspectives during planning and operations; conduct complementary efforts during planning; conduct directed studies, independent critical reviews, and analyses of plans; and enhance the understanding of the operating environment. The following enable the red team to accomplish those tasks: personnel with varied experience and backgrounds; theatre-specific or functional subject matter expertise; access across staff functions; and works within an environment that values alternative perspectives.[12]

Overall, understanding what a red team is and how it can enhance decision making and influence the understanding of the problems the organization is facing will allow it to overcome common obstacles it faces. However, every red team will face its own particular set of organizational obstacles. The following section describes many common obstacles that MEF and MEB red teams are likely to face in the execution of their duties.

<u>*Obstacles to Effective Red Teaming*</u>

The purpose of this cell is to challenge prevailing notions, rigorously test current TTPs and counter group-think.

General James Amos, *35th Commandant's Planning Guidance*, 2010

A Missing Purpose

The 35th Commandant of the Marine Corps, General James Amos, articulated the importance of instituting red teaming by making it a number one priority in the 2010 Commandant's Planning Guidance (CPG). General Amos states, "The purpose of this cell is to challenge prevailing notions, rigorously test current TTPs, and counter group-think".[13] The Commandant's implementation guidance for this capability is focused at each MEF and deploying MEB.[14] The importance of this document for red teaming in the Marine Corps is significant, since it mandates the creation of red teams and orders the implementation of red teaming curriculum at both Officer and Enlisted PME schools.[15] While the purpose is stated, a closer examination is needed. The purpose as articulated in the CPG is, in actuality, a set of tasks that red teams need to accomplish while assigned to each organization. This is not merely semantics nor creating a problem where there was not one before. In order to understand how to implement these tasks, a clearer 'in order to' statement must be derived to ensure the red team can accomplish its mission and the organizational leadership understands its purpose. In his article, "Red Teams: Strengthening Through Challenge", Lieutenant Colonel Brendan Mulvaney notes the mission of Marine Air Ground Task Force (MAGTF) red teams is to "Provide the MAGTF Commander an independent capability that offers critical reviews and alternative perspectives that challenge prevailing notions, rigorously test current TTPs, and counter group think in order to enhance organizational effectiveness."[16] He cites a draft Commandant of the

Marine Corps (CMC) White Letter, which was not signed as of the publishing of the article in

the July 2012 edition of the Marine Corps Gazette, and is currently still unsigned. While this

assigns a purpose to the tasks laid out by the Commandant, it does not help in answering how the

red teams will accomplish the overall purpose of 'enhancing organizational effectiveness'.

The University of Military and Foreign Cultural Studies (UFMCS) Red Team handbook

provides, in addition to a definition of red teaming, a common requirement of all red teams,

which is to "challenge the organization by providing alternatives through critical thinking in

order to improve decision making and achieve the end state."[17] While the purpose written in the

UFMCS Red Teaming Handbook is clearer to a military professional, the handbook lacks the

clarity and understanding of exactly how to implement and execute red teaming within an

organization. Overall, the lack of a clear purpose for red teaming in the Marine Corps is the first

of many obstacles red teams face while trying to accomplish their mission.

Culture of the Organization

The next obstacle to effective red teaming involves the culture of the organization. The

core concepts of red teaming include challenging the organization's thinking, providing

alternative analysis, and introducing alternative perspectives. Often, the modes of thought inside

an organization inhibit understanding the environment or situation. Additionally, organizations

do not like their thinking to be challenged. Williamson Murray states, "One should also note the

natural human distaste for upsetting evidence, especially when it challenges cherished

convictions. Not all leaders find intellectual debate congenial, and even fewer relish challenges

to their own ideas and assumptions."[18] Overall, the core concepts of red teaming provide the

organization with a capability to challenge the ideas and assumptions that can be harmful to

mission success.

The organizational culture within hierarchical, military organizations is a significant

determinant to the effectiveness of the red team. Organizational culture is defined as the

"persistent, patterned way of thinking about the central tasks of, and the human relationship

within, an organization."[19] Organizations adopt patterns of assumptions about their functioning

that influence behaviors in an organization because they repeatedly have led people to make

decision that 'worked in the past'. Every organization has its own standard operating procedures

that serve as members' short-hand method for approaching new issues as they arise. In this way,

organizational cultures help organizations manage their internal and external environments.

Internally, organizational culture helps establish and maintain "effective working relationships

among members"[20] through the organization's "language and concepts; group and team

boundaries; power and status; and rewards and punishments."[21] They provide predictability for

an organization's members, which improve its members' ability to operate efficiently.

Red teaming must challenge the deeply held assumptions that drive an organization's

culture and contest what has 'worked in the past'. "Red teaming can thrive in an environment

that not only tolerates, but values internal criticism and challenge."[22] The German army's

transformation from 1918 to 1940 was a product of their organizational culture and ability to

challenge the understanding that what worked in the past may not work in the future. This

included free-play war games (*Krieg spiel*) that were linked to field exercises in order to test and

validate the war game results.[23] The *Krieg spiel* was also an invaluable tool to evaluate the

intellectual and combat sense of the officers who played against each other, and was "essential to

the processes of preparing the officer corps intellectually as well as physically."[24]

Conversely, an organization's culture can render it incapable of adapting to new

circumstances and "blind the organization to changed environmental circumstances so that new

opportunities and challenges are met with routinized rather than adaptive behavior."[25] Finally,

another effect of an organization's culture is to resist and not attend to new tasks that it deems

not advancing its sense of mission.[26] In sum, attention must be paid to an organization's culture

when a capability such as red teaming, which is specifically chartered to challenge an

organization's way of thinking (or sense of mission), is being implemented.

How the red team interacts with other staff members within the organization is critical,

specifically gaining the trust and rapport within the organization. Major General Allen

Batschelete states, "Red Teaming activates a staff's 'antibodies', especially if trust and rapport

have yet to be established by those conducting the critique…arguably, the staff officer culture

should be the focus…anyone Red Teaming must foster trust by working within tactical timelines

to deliver actionable, salient critique to the staff."[27] Building relationships with other staff

officers and fostering trust through effective communications is a key enabler in ensuring red

teams are successful in accomplishing their mission. In her article in *Military Review*, Susan

Craig states, "Effective communication is vital. This means knowing how and when to ask

questions, knowing your audience and the personalities with which you are dealing and for

whom you are crafting your message, and using and demanding precise language."[28] Overall,

the deeply held values and underlying cognitive biases of an organization are an obstacle to

effective red teaming at the MEF and MEB level.

A Conflation of Terms

The next obstacle to understanding how a red team can be employed at a MEF or MEB is the conflation of the terms "red team" and "red cell." The 2010 CPG exacerbates this confusion by utilizing the incorrect terminology and identifies a red team as a red cell.[29] The term "red team" is a relatively new buzzword used in military and civilian enterprises. While many organizations inside and out of the military use "red teams", there is no common understanding between or within organizations of what red teaming means. The lack of foundational understanding creates confusion and conflates the term 'red team' and 'red cell', especially within the Marine Corps. This confusion was one of the principal reasons why the Alternative Analysis team at Headquarters Supreme Allied Command Transformation (ACT), North Atlantic Treaty Organization (NATO) decided to call the capability "Alternative Analysis" instead of "Red Team".[30] The "red" in red team does not necessarily refer to the enemy, despite to common military parlance. In fact, it often means looking at ourselves and our way of doing business.

Red teams are different from red cells; red cells are a specific war gaming function that has a distinct place within the Marine Corps Planning Process (MCPP). Red cells are valuable tools intended to role-play the enemy and help test our plans and course of action against likely actions. Red cells are typically an interim group, with members often called on because of a particular expertise or experience with the given enemy and then return to their primary duties when the war game is complete.[31] Conversely, red teaming is the primary duty of its members, is not limited to war gaming, and they are tasked with red teaming throughout the Marine Corps Planning Process. Overall, the conflation between the two terms produces institutional confusion and is another obstacle to the effectiveness of a red team within a MEF or MEB.

Lack of Red Teaming Doctrine

No formal doctrine exists for red teaming. Therefore, commanders and staffs do not have

an understanding on how to best position the red team within the staff. Even if an organization's

leadership mandates the implementation and execution of a new capability, it needs to be

thoroughly understood and translated into routines and procedures used to train and socialize the

institution. Senior leaders can mandate change, but if there is midlevel leadership resistance or

misunderstanding, it will cause a breakdown in implementation. This understanding is critical in

order to translate the conceptual understanding of a new capability into the ability for an

organization to effectively implement and utilize it. This knowledge gap is inhibiting MEF and

MEB staffs, and they are missing an opportunity to allow the organization to challenge itself and

its norms.

The Red Team Handbook published by the US Army's University of Foreign Military

and Cultural Studies is an excellent resource and is the first step toward developing a doctrine

within the US Department of Defense.[32] Although there is no formal doctrine, this does not mean

that red teams do not perform specific and recurring tasks while conducting their mission. There

is a risk in identifying tasks that a red team can perform, and is based on the assumption that

identifying red team tasks will stifle the creativity of the team and ultimately lead to a check-list

mentality. While this argument has validity, a greater risk is not providing its practitioners the

foundational building blocks needed in order to accomplish their mission. Additionally, decision

makers within MEFs and MEBs need to understand what a red team is capable of doing in order

to better integrate the red team into its critical processes. Like every other discipline, once red

teamers understand the basics they can then use their creativity, deviate from them, and produce

'out of the box' answers to the complex problems facing MEFs and MEBs. Currently, there is

no formalized doctrine or accepted standards of red teaming. Until this problem is fixed, red teaming within the Marine Corps will continue to face challenges by not providing its practitioners the building blocks needed to accomplish their mission and empowering its decision makers to better integrate the red team into its critical processes.

Two Rival Claims

The first rival claim is that to be effective, the red team must have full access to the commander. A red team should be expected to raise issues that might not be welcome throughout the organization; it needs the support, sometimes from the top levels of the enterprise. Top cover is needed to ensure that the red team's products not only have the requisite degree of independence, but are seriously considered as well.[33] "First and foremost, the red team must have the trust of and access to the commander….This is essential to the success of their mission."[34]

While 'top cover' and advocacy is an important aspect for a team whose charter is to challenge an organization's thinking, the commander needs the red team's perspective only if all other lesser means of input have failed. As stated in the 2003 Defense Science Board Task Force's report on *The Role and Status of DoD Red Teaming Activities*, "To be effective, a red team needs a scope, charter, and reporting relationship that fits the management structure."[35] Red team input should be at the lowest level possible within the organization. More importantly, advocacy comes in the form of the organization's perceived understanding and acceptance of the red team perspective. Relevant, timely, and digestible red team input necessitates an understanding of how, when, and where this input should be provided. Early, iterative, and professional feedback, which challenges the organization's prevailing notions at an 'oblique

13

angle', will help build an enhanced situation understanding, provide value to the process, and build credibility for the red team. The final piece to effective red teaming is having an organizational understanding of how, when and where the red team can provide the greatest contribution to the critical processes of the organization. This necessitates a decision by the senior leadership of the organization on where to place the red team within the organization, what areas the red team will focus on, and how the red team will interact with the rest of the organization.

The second rival claim is that the organization as a whole is already red teaming its products and processes. This claim states red teaming is inherent in the function of every Marine officer and providing personnel to this concept is unneeded. While this may be possible, many organizations that claim they are red teaming their products are doing it haphazardly and without any structure or intellectual rigor. Additionally, the field of cognitive psychology provides a good source of information stating people do not have the ability to inherently red team their products and processes. Cognitive biases, undiscovered implicit assumptions, and complexity are challenges to effective decision making.[36] Cognitive biases are unavoidable and must be identified, not ignored by stating Marines are invulnerable to these biases. One way to account for cognitive biases is through training and education.[37] Additionally, utilizing analytic techniques are an effective way to account for these obstacles in our thinking and help highlight the limitations in human mental processes.[38] Just as a runner must train and understand the mechanics of running in order to become proficient, red teaming within an organization needs to be understood and mastered in order to effectively utilize the capability. These two rival claims highlight a lack of understanding of how to employ red teaming at the MEF and MEB level, and are obstacles that need to be overcome in order to effectively accomplish the red team's mission.

Lack of Placement Options

The final obstacle confronting both red team practitioners and the organizational

leadership they support is a lack of placement options for the red team within a MEF or MEB

staff. Effectively implementing red teaming within the MEF and MEB necessitates an

understanding of where to place this capability within the organization. Additional factors that

weigh into where the red team will be placed include the mission of the organization, what

conditions are favorable for placement, and an understanding of the advantages and

disadvantages of specific red team placement within the organization. Five models for

placement of a red team are proposed, and discussed in depth later in this study. The models are

"*Seat at the Table*", "*Hug a Planner*", "*Tiger Team*", "*Intel Analysts Gone Wild*", and "*Ad-Hoc*".

While this list is not exhaustive and combinations of these models can be utilized, the five

models addressed give decision makers enough flexibility to tailor the red team to their specific

needs and are a first step in providing commanders with the necessary knowledge to execute red

teaming at the MEF and MEB levels.

From Conceptual to Practical:
Five Models for Applying Red Teaming at the MEF and MEB

A gap in information exists between what a red team does and how it does it. This

section tries to close the gap in information and provide placement options for MEF and MEB

red teams. Each model is paired with a historic case study to determine what ways red teaming

was integrated into the organization, and what conditions were present within the team or within

the organization writ large that allowed effective integration to take place. The list of options is

not exhaustive, and through creativity, experience, and trial and error a greater menu of options

will be available. These models are meant to help MEF and MEB decision makers choose how best to emplace the red team for maximum effect based on specific organizational requirements.

The case studies provide a foundation to draw upon when deciding how and where to place the red team within a MEF or MEB staff. All case studies follow the same general framework, which includes a description of the red team model; how the red team was utilized within an operational level staff; red team composition; an analysis of the three required conditions within an organization; advantages and disadvantages; and an overall assessment of the model's effectiveness.

"Seat at the Table" – Third Marine Aircraft Wing shaping and fusion cell: 2004-2005

This model places the red team directly under the cognizance of the MEF or MEB Commanding General. In this model, the red team leader will be a trusted agent of the commander and have frequent and direct access to him. The commander provides them personal support in order to best employ this capability; the support of the commander is critical to this model. The team must know what the commander is being presented, and they must know what keeps him awake at night. In his *Marine Corps Gazette* article, Lieutenant Colonel Brendan Mulvaney states, "The red team has to develop the relationship with the commander to know what information the commander receives and to ensure that true alternatives are presented."[39] Additionally, the commander "must support the red team so they can develop and present these alternatives and challenges to the other staff sections without hesitation."[40] In this model, the red team ensures its freedom of movement and independence from the staff and provides the commander with viable alternatives that he may not be hearing from the other staff sections.[41]

The Third Marine Aircraft Wing (3rd MAW) utilized this model during its deployment to Iraq from 2004 to 2005. The 3rd MAW was commanded by Major General Amos, who was a strong advocate for the red team concept. He tasked his red team (officially titled "3rd MAW Fusion Cell") to "be the CG's Napoleon's Corporal; continually assess how we are doing business; if it doesn't make sense – say so; and offer alternatives to the CG."[42] This task falls in line with the red teaming core concept of challenging the organization's thinking and ensured the commander would get alternatives to the 'normal way of doing business'. Additionally, the fusion cell analyzed enemy trends to identify new TTPs the enemy is employing, and attempt to "out rate" red's ability to innovate and adapt.[43] This task is more in line with the Marine Corps doctrinal definition of a red cell, which role-plays a thinking enemy in order to validate blue's plans. Lastly, the cell was tasked with analyzing how 3rd MAW actions would affect Iraqi locals.[44] This task is in line with the Marine Corps doctrinal definition of a green cell, which role-plays other actors, which includes the local population. In addition to the fusion cell's tasks, "The cell briefed the commander daily, and an identified key to success was "access and free flow of information and ideas."[45]

The next aspect to examine is the composition of the 3rd MAW fusion cell. The cell consisted of 15 personnel of diverse backgrounds and technical expertise. The majority of members were field grade officers, and both the fusion cell lead and coordinator were Marine Corps Colonels. The breadth of the functional expertise spanned all of the warfighting functions. There were also regional experts within the fusion cell, which included a Sunni Arab specialist. Finally, there was a civilian operations analysts assigned from the Marine Corps Combat Development Command.[46] It generated products that influenced how the organization viewed the problems it faced, and was successful in its mission. Overall, the 3rd MAW fusion cell

consisted of a large team made up of numerous functional and regional experts that provided the commander with an independent capability to challenge prevailing notions, rigorously test its current TTPs, and counter group think in order to enhance decision making. This paper will now analyze the three required conditions necessary in order to help facilitate the generation of relevant and timely red team input into 3rd MAW critical processes.

The first required condition is organizational processes that integrate independent red teaming viewpoints. The 3rd MAW, through the advocacy of Major General Amos, ensured there was a high integration level of red teaming viewpoints into the processes of the organization. Daily meetings and briefs allowed the Commanding General an ability to interact and evaluate the products and perspectives the fusion cell created. This allowed the organization to seriously consider and act upon the output of the fusion cell, and integrated its products within 3rd MAW's planning process. Additionally, allowing the fusion cell leader to be involved in senior level discussions provided it with valuable insight and enabled the team to understand what problems the Commanding General felt the organization was facing. Overall, the 3rd MAW fusion cell had a high level of integration into the critical process, which allowed the fusion cell the ability to provide timely and relevant red team input.

The second required condition is a robust interaction between the red team and other staff sections within the organization. The interaction between the fusion cell and other staff sections was moderate. Interaction occurred because of the importance the Commanding General placed in the fusion cell, not because the cell required this interaction to produce its products or viewpoints. Since the fusion cell had direct access to the Commanding General, it could distance itself from the planning process and still provide alternative perspectives and input. This does not mean that interaction did not take place; it just highlights the fact that this interaction is not

critical to enabling the cell to provide timely and relevant products. Overall, due to the intimate relationship between the fusion cell and the Commanding General, there is a moderate level of interaction between red and blue planners.

The final required condition is red team independence in order to avoid being "captured" by the bureaucracy. With its unique access to the Commanding General, the 3rd MAW fusion cell had a significantly high level of independence throughout the organization. This independence allowed the fusion cell to remain independent and not become subordinate to a staff directorate or any projects it challenged. The environment of the organization, via the Commanding General, provided the fusion cell with top-cover when challenging deeply held assumptions or offering new ideas. Overall, the 3rd MAW fusion cell had significant independence that helped avoid it from being captured by the bureaucracy or having its ideas and viewpoints suppressed.

The advantages of this model include frequent and direct access to the commander. The red team will not experience lags in communication or get second hand information that was 'lost in translation' through the staff process. Additionally, the red team can challenge the organization's leadership, challenge the unit, and tell the commander the hard truths that he may be blind to. Finally, the red team will require top cover from the commander to provide an unvarnished, alternative perspective. The considerations when utilizing this model are finding the correct 'trusted agent'. In this model, the red team leader will likely be hand-selected by the Commander to fill this billet. Effective communication between the red team and the staff is crucial in this model to ensure the red team and staff are working in concert with one another and not at odds.

The 'Seat at the Table' model effectively utilizes the red team. The three conditions that need to be established within an organization to effectively utilize red teaming were present. The organization had processes in place that integrated independent red teaming viewpoints. Major General Amos established this through his guidance given to the fusion cell, and provided the cell daily access to him.[47] Additionally, there was robust interaction between the red team and other staff sections that was mandated through Major General Amos' guidance stating the fusion cell "Must have free access to multiple sources of information and players."[48] Finally, the fusion cell had significant independence to avoid being captured by the bureaucracy. These conditions allowed timely generation of red team products that influenced how the organization viewed the problems it faced. However, there is a caveat for this model. The 'Seat at the Table' model required significant advocacy and commander focus in order to ensure the organizational conditions were present for the cell to be effective. Additionally, many of the problems faced by other red teams such as lack of doctrine, the culture of the organization, and the importance of building personal relationships are less important in this model due to the significant command advocacy of the concept and the size and scope of the personnel within the fusion cell. Overall, this is an effective model; however, it is less effective without significant advocacy from the commander.

"Hug a Planner" – Regional Command (South West) Red Team: 2011-2012

This model places the red team within the plans section of the organization. In this model, the red team works directly for the plans officer, and works directly with the planners in both the future operations and future plans sections. An additional arrangement includes having the red team working within the assessment branch of the plans section. In either scenario, the

red team has full access to the planners, the operational planning team (OPT) meetings, working groups (WG), and other breakout groups that may emerge from the plans section.

This model was executed for II MEF (Forward)'s deployment to Afghanistan from March 2011 to March 2012. II MEF (Fwd) was designated as Regional Command (South West) (RC (SW)) and its area of operations included Helmand and Nimruz Provinces. The operational problems the red team confronted as part of RC (SW) included transitioning the Afghan National Army (ANA) into the lead for planning and executing operations; considering the effects of kinetic operations in northern Helmand Province; providing viable alternative agricultural solutions; and considerations for troop drawdown and equipment retrograde. The first half of the deployment saw the red team directly under the control of the combined plans officer; whereas, for the second half of the deployment the red team was under the control of the II MEF (Fwd) assessment officer, Colonel Timothy Mundy. While these are two distinct organizational chains of command, the variance between them does not warrant a different analysis for both.

The RC (SW) red team consisted of four military officers and one civilian, with one member of the team having previous red team experience. Two members of the red team were from the British military, and two members were Marine Corps officers. The civilian member was a US Naval War College faculty member. Additionally, five civilian subject matter experts (SMEs) worked collaboratively with the Red Team but were not organic to the team. However, these SMEs worked with the red team constantly, and were part of every product produced for the organization upon their arrival to the organization. Overall, the diversity of personnel facilitated timely and relevant generation of red teaming viewpoints. The following paragraphs will analyze the three required organizational conditions needed in order to help facilitate the generation of relevant and timely red team input into RC (SW) critical processes.

The first required condition is organizational processes that integrate independent red teaming viewpoints. Initially, there was a very low level of red team integration into the critical processes of RC (SW). This was due to a combination of unfamiliarity with the concept and the late arrival of the red team to II MEF (Fwd). The first deputy red team leader, Lieutenant Colonel Jim "Timber" Traver, had his first meeting with II MEF (Fwd) staff members at the Marine Expeditionary Force Readiness Exercise (MRX) barely two months before deployment to Afghanistan.[49] The late arrival of the red team to the organization made the red team feel like outsiders to II MEF (Fwd) processes, and was an obstacle that needed to be overcome throughout the deployment. However, through time, the red team integrated its products within the Marine Corps Planning Process through active participation in operational planning teams. Additionally, the red team integrated within working groups and senior level discussions that provided the organization insight and enabled the team to provide relevant and timely products and input for the organization. Finally, the RC (SW) red team developed products in support of problem framing, course of action development, and course of action war gaming, which are indicators of a red team effectively integrating into the critical processes of the MEF or MEB. Overall, there was a moderate level of red team integration within the critical processes of RC (SW).

The second required condition is a robust interaction between the red team and other staff sections within the organization. The level of interaction between the red team and other staff sections continued to increase throughout the duration of the deployment, and was very high by the time II MEF (Fwd) completed its deployment. This was due to the red team's integration and participation in operational planning teams, working groups, and senior level seminars. This interaction provided both the red team and the organization with a greater understanding and appreciation for the issues it was facing, and allowed the red team to foster personal relationships

throughout the staff. The robust interaction between the red team and other staff sections facilitated the building of personal relationships that helped the red team overcome organizational obstacles, and ultimately allowed the red team to become more effective. Overall, there was a high level of integration between the red team and other staff sections within the organization, which helped both sides to better understand the problems II MEF (Fwd) faced while in Afghanistan.

The final required condition is red team independence in order to avoid being "captured" by the bureaucracy. The independence level of the RC (SW) red team was low throughout its deployment. This was due to a number of factors, which included assigning the red team to a sub-directorate three levels below the Commanding General. The RC (SW) utilized the red team as a project red team instead of an enterprise red team (a more detailed discussion of the differences between project and enterprise red teams is provided in Appendix C). This required the red team to integrate into the critical processes of RC (SW) via the blue planners, as discussed in the previous section. However, once red teaming perspectives were accepted and utilized in this fashion, it enabled flexibility and utilization internally across the organization and externally to higher, adjacent, and subordinate units. Examples of this flexibility included numerous internal critical reviews of internal planning documents to ensure horizontal staff integration, and a study conducted to identify RC (SW) command and control inefficiencies. Additionally, the red team conducted battlefield circulations throughout Helmand Province and in Kabul to ISAF Headquarters to gain a deeper appreciation for the problems facing subordinate and higher headquarters units. However, any perspective that challenged deeply held RC (SW) assumptions would have to be provided at a lower level of the bureaucracy, and then distilled up through the leadership. This is its greatest weakness, and must be considered when choosing to

23

utilize this model. Overall, there was a low level of independence provided for the RC (SW) red team, and must be considered in order to ensure the red team is effectively utilized and provides input that aids in decision making and influences how the organization views the problems its facing.

Advantages to this model include greater interaction with the planners as the plan is being constructed. This model facilitates red team input early and often in planning efforts through participation in OPTs, WGs, and Senior Leader Forums. This helps mitigate friction because the red team maintained situational awareness and was not 'outpaced' by other planners within the organization. Additionally, it helps mitigate 'planning surprises' due to regular red team input. Finally, it is much easier to discuss alternative perspectives and to challenge prevailing notions while ideas are still in their infancy, and ideas haven't been created on power point slides. There is an emotional attachment to a plan once the plan has gone through the briefing cycle of meetings and working groups. This model facilitates early integration and the ability to provide alternative perspectives early and throughout the whole process. Considerations when utilizing this model include less access to the commander, if any at all. Additionally, it is harder for the red team to get first-hand knowledge of what the commander's thoughts are, and normally must receive this information through bureaucratic staff processes. There is a fundamental difference between this model and the previous one; the "Hug a Planner" model for red team placement is roughly parallel to a product or project red team whereas the "Seat at the Table" model for red team placement is roughly parallel to an enterprise red team.[50]

The 'Hug a Planner' model effectively utilizes the red team; however, it had to overcome organizational obstacles in order to accomplish its mission. Effective engagement at the 'planner level' and participation in numerous operational planning teams and working groups provided

the red team to gain credibility and ultimately to become effective, despite the organizational

constraints placed upon it. The biggest strength of this model was the ability to conduct robust

interaction between the red team and other staff sections within the organization, which satisfies

one of the ways to measure red teaming effectiveness. Daily interaction between the red team

and the staff also facilitated timely generation of red team products that helped influence how the

organization viewed the problems it was facing. One example was red team input into an

operational planning team during problem framing, which included a strength, weakness,

opportunity, and threat (SWOT) analysis of the Afghan criminal patronage network. Another

example included a red team product focusing on the Kajaki Dam and upper Helmand River

valley, which provided a historical perspective on the social and economic interactions and

decision making of the local population in terms of wheat versus poppy growth.

However, the red team was not effective in terms of the organization creating processes

that integrated independent red teaming viewpoints. The Regional Command (South West) red

team had to operate in an environment that did not have these organizational processes in place.

Initially, organizational resistance was extremely high, and the red team was viewed as a threat

and marginalized.[51] This was due to a lack of understanding on how the red team could integrate

into the organization's processes and an organizational culture that wouldn't allow the red team

to operate as intended. This model suffers due to lack of doctrine and established acceptable

standards due to its position within the staff and lack of significant command advocacy.

Personal relationships are essential for this model to be effective since the organizational culture

places barriers on its employment at the highest levels of command. Finally, this model does not

have the breadth and depth of knowledge resident within the team like the 'Seat at the Table'

model has. Therefore, it is important to maintain reach back capabilities to the larger red team

community or other local sources of knowledge to augment the team. Overall, this model is most effective when an organization wants to utilize it as a project red team and focus it at a lower level within the organization in order to facilitate robust interaction between the red and blue teams.

"Tiger Team" – 2nd Marine Air Wing (Forward) Red Team: 2011

This model places the red team under the staff cognizance of the chief of staff. The team's focus is more internally on the processes and procedures of the organization. In this model, the red team is focusing on finding how the organization can increase its efficiencies in process, roughly akin to the Lean Six Sigma strategy for process improvement.

This model was executed for II MAW (Forward)'s deployment to Afghanistan from March 2011 to March 2012. The operational problems the red team confronted focused mainly on how to streamline and create processes that are more effective internal to the organization. These included a more efficient integration of intelligence, surveillance, and reconnaissance assets to support operations, and a thorough study on how 2nd MAW could streamline its organizational processes in order to decrease expenditures and minimize the time from the origination of a support request to execution.

The 2nd MAW (Fwd) red team consisted of two full-time personnel and utilized other members as needed.[52] This case study is an example of a hybrid mix of full-time and temporary personnel utilized on a red team. The temporary members of the red team were utilized for their technical expertise on a specific red team product, and then released back to their primary work sections. This hybrid mix was an effective use of limited personnel on a short-duration, focused

red team product. This paper will now analyze the three required conditions necessary in order to help facilitate the generation of relevant and timely red team input into 2nd MAW (Fwd) critical processes.

The 2nd MAW (Fwd) had a low level of organizational processes that integrated independent red teaming viewpoints. This was due, in part, to red team placement within the organization and focus of the red team. The 2nd MAW (Fwd) red team's placement under the chief of staff allowed the organization to continue to function without having to alter any organizational processes and still have valuable red team input. Additionally, the internal focus of the 2nd MAW (Fwd) red team facilitated its use without having to change how it conducted its day to day staff processes. However, it did not seriously affect the red team's ability to accomplish its mission, and allowed the organization to act upon the output of the red team. An example of this includes the red team's study of intelligence, surveillance, and reconnaissance integration into 2nd MAW operations in order to maximize this capability.[53] Overall, there was a low level of organizational process change; however, the red team still provided timely and relevant input that aided the organization.

The 2nd MAW (Fwd) red team had a moderate level of interaction with other staff sections within the organization. Overall, this was due to the red team's limited focus on internal processes. However, there was a high level of interaction between the red team and other staff sections in those areas specified by the organization. The 2nd MAW (Fwd) red team worked extensively with specific staff sections when conducting their analysis to determine how the organization could increase its effectiveness. This interaction allowed the organization to gain a greater appreciation for the internal issues facing the organization, and facilitated a shared understanding of the solutions available to overcome these obstacles. Overall, there was a

moderate level of integration between the red team and other staff sections within the organization; however, there was a high level in those specific areas the red team conducted its studies.

The final required condition is red team independence in order to avoid being "captured" by the bureaucracy. The 2nd MAW (Fwd) red team had a moderate level of independence due to its placement under the chief of staff. Their placement allowed the red team the ability to be independent and not become subordinate to the organization or project it is challenging. Additionally, the red team had the freedom and flexibility to be utilized internally across the organization in order to accomplish its mission. The red team enabled horizontal staff integration by conducting studies and providing products that enhanced the effectiveness of internal 2nd MAW (Fwd) operations.[54] Overall, the red team's ability to conduct studies across the organization allowed it to provide input that aided in decision making and influenced how 2nd MAW (Fwd) conducted operations.

Advantages of this model include having independence from any particular staff section and freedom of movement throughout the staff. Additionally, since the red team works directly for the chief of staff, communications delays and bureaucratic confusion are minimized since there are fewer layers to go through to get the commander's guidance. Considerations when utilizing this model include marginalization and a perception of the red team as being yet another "special staff section" under the staff cognizance of the chief of staff. Additionally, the red team can be confused for the "special initiatives group" instead of the red team. Finally, it can be harder to plug into the critical staff processes when the team is outside of the normal staff.

The lack of doctrine and established acceptable standards affect this model as much as other models due to its position within the staff. Consideration must be given when choosing

28

this model to ensure the red team does not evolve into a special initiatives group or other special staff function. Personal relationships are also important for this model to be effective due to its organizational culture. Additionally, this model does not have the breadth and depth of knowledge resident within the team; however, augmentation of subject matter expertise is easier due to the red team's focus on internal organizational processes.

The 2nd MAW (Fwd) red team was effective due to its placement on the staff and focus on internal organizational processes. The organizational processes that integrated its independent red teaming viewpoints also facilitated its effectiveness. Additionally, it was effective in generating red team products that influenced how the organization viewed the internal process problems it was facing. However, the 2nd MAW (Fwd) red team did not focus externally on the environment. This caveat is important when an organization chooses to emplace and employ its red team. If the organization chooses to have its red team focus internally, then the 2nd MAW (Fwd) red team case study could be classified as a success. However, there was no data to provide an assessment on its effectiveness in relation to focusing externally, outside the organization. Overall, this model is most effective when an organization wants to utilize it to focus on its internal processes and create efficiencies within its processes and procedures.

"Intel Analysts Gone Wild" –COMISAF Red Team: 2011-2012

This model places the team under the staff cognizance of the intelligence officer. The red team conducts functions very similar to the "Hug a Planner" model, but routes its products through the intelligence officer instead of the plans officer. In many ways this model is also akin to a product or project red team. Depending on the commander, the red team within this model

may have direct access to the commander, but more likely than not will gets its information from the intelligence officer or a branch chief within the section. In this model, the red team members have greater flexibility and a wider array of subject material to conduct red team analysis on. This includes not only the enemy and other key actors, but also the environmental factors that are present in order to extrapolate what the key factors are which will drive key leaders towards specific decisions. Additionally, political psychology and the ability to project plausible future scenarios are also viable red team products within this model.

The International Security and Assistance Force (ISAF) Headquarters red team executed this model from December 2010 to December 2012. ISAF's mission is to conduct operations in support of the Government of the Islamic Republic of Afghanistan. Its goals include reducing the capability and will of the insurgency, supporting the growth in capacity and capability of the Afghan National Security Forces (ANSF), and facilitating improvements in governance and socio-economic development in order to provide a secure environment for sustainable stability that is observable to the population. The operational problems the red team faced were defining the complex strategic and political operating environment and providing analysis on how key actors would operate within this environment. Additionally, developing plausible future scenarios based on present driving forces and critical factors the red team identified.

The COMISAF red team consisted of a mix of US Army officers and civilians. The size of the team fluctuated throughout the timeframe of the case study, from five personnel in the beginning of 2011 to ten personnel at the beginning of 2012. The majority of members were field grade officers, and the red team leader was a US Army Colonel who was the senior fellow at The Brookings Institute. The breadth of expertise and experience covered both functional and regional, with many members having conducted multiple combat deployments. This paper will

now analyze the three required conditions necessary in order to help facilitate the generation of relevant and timely red team input into ISAF Headquarters critical processes.

The ISAF Headquarters had a moderate level of organizational processes that integrated independent red teaming viewpoints. This was due, in part, to the complexity and size of the organization and ISAF Headquarters' strategic focus. The COMISAF red team operated within this environment by producing stand-alone products that were tightly controlled and briefed to only specific members of the organization.[55] This allowed the organization to integrate its products and consider the output of the red team.

The second condition needed is a robust interaction between the red team and other staff sections within the organization. The COMISAF red team had a low level of interaction with the staff. This was a product of the tight control of its products and the way in which the red team leader recommended to the organization to employ the COMISAF red team.[56] Tight control of red team products can be useful in certain situations, especially when the red teaming perspective is sensitive and the political climate of a strategic level headquarters requires it. However, this should be the exception and not the normal practice of a red team. Interaction between the COMISAF red team and other staff sections would only strengthen both the red team and the organization's understanding of the issues it is facing. Overall, there was a low level of interaction between the COMISAF red team and the staff; however, it was decided that ISAF's strategic and political environment necessitated this specific arrangement.

The final required condition is red team independence in order to avoid being "captured" by the bureaucracy. The COMISAF red team had a low level of independence due to the same factors present already described for the RC (SW) red team. Conducting red teaming within a sub-directorate that is located numerous levels within an organization does not allow the red

team to maintain a high degree of independence. Overall, there was a low level of independence provided for the COMISAF red team, and must be considered in order to ensure the red team is effectively utilized and provides input that aids in decision making and influences how the organization views the problems its facing.

Advantages to this model include ready access to intelligence reports and access to intelligence information that may be harder to find if not assigned within that section. Considerations include the possibility of less independence, less staff integration, and greater likelihood that information has been distilled through the bureaucratic process before reaching the red team. Additionally, red teaming within this model can create friction between the intelligence personnel and the red team due to the possibility that red team products can contradict what intelligence analysts are producing. This creates the possibility of limiting access of red team products and filtering of red team viewpoints.

This model suffers due to lack of doctrine and established acceptable standards due to its position within the staff and lack of significant command advocacy. This model does not have the breadth and depth of knowledge resident within the team like the 'Seat at the Table' model has. Therefore, it is important to maintain reach back capabilities to the larger red team community or other local sources of knowledge to augment the team. Additionally, personal relationships are essential for this model to be effective since the organizational culture places barriers on its employment at the highest levels of command.

The 'Intel Analysts Gone Wild' model effectively utilizes the red team; however, it had to overcome organizational obstacles in order to accomplish its mission. The COMISAF red team was effective in generating timely red team products that influenced how the organization viewed the problems it faced. Evidence of its effectiveness was measured not by how much

32

access the red team had to COMISAF, but by how the ideas and verbiage used in red team products manifested in the discourse and narrative of the organization.[57] The red team knew it was effective when they could hear other staff officers using ideas and words generated from red team products. This also highlights the organization's ability to integrate independent red teaming viewpoints; however, it was the power of the red team's ideas that forced the organization to integrate their viewpoints, not the organizational processes themselves. So in this regard, the ISAF Headquarters organization was an obstacle the red team had to overcome, and it did not facilitate the integration of red teaming viewpoints. To further this point, the red team never had visibility of how their products were used once the red team products were finished.[58] Overall, this model is most effective when utilized as a project red team that can help broaden the understanding of the external environment.

"Ad-Hoc" – NATO Alternative Analysis Group: 2011 - present

This model does not have a standing red team and has only a few core members with additions to the red team on an "as-needed" and temporary basis. If there were permanent members of the red team, they would fall into one of the previously discussed places within the MEF staff. The differentiation of this model is in its transience and temporary nature. When manpower restricts a fully staffed and trained red team, this model can be executed to augment the permanent, core staff. Temporary members can come from any staff section, and it is advisable to get divergent staff sponsorship in order to increase diversity in the temporary team. Additionally, it is recommended that at least one staff member with an advanced planning specialty and training is to augment the red team. This provides a conduit for integration into the plans section and planning expertise that may or may not be resident within the red team.

This model will be implemented by the NATO Alternative Analysis (AltA) group, and is scheduled to be become fully operationally capable by October 2013. The AltA case study differs significantly from the previous case studies because there are no permanent personnel that work as an independent 'AltA team'. AltA is a capability that "offers NATO staff officers the opportunity to inject additional knowledge, or perceptions, in a different way into a decision-making process alongside traditional problem-solving processes."[59] This ad-hoc model is designed for use by NATO staff officers who complete the newly created AltA facilitator course at the NATO staff college. The operational problems facing AltA facilitators include becoming constrained by organizational influence, not duplicating existing functions within the organization, and a willingness to accept AltA input that can be controversial. This model was born out of necessity for the NATO AltA group because of strict manpower restrictions. The solution for the lack of manpower is to send staff officers to the AltA facilitator course. Upon completion of the course, NATO staff officers will be assigned as AltA facilitators within joint planning groups. This paper will now analyze the three required conditions necessary in order to help facilitate the generation of relevant and timely red team input into the organization's critical processes.

The first required condition is organizational processes that integrate independent red teaming viewpoints. As previously discussed, implementation of the AltA model is forthcoming. However, a moderate level of organizational process adaptation can be expected to allow for the integration of AltA perspectives and viewpoints. This is due to AltA's integration into the Joint Operational Planning Process (JOPP) and utilization within the Joint Planning Group (JPG).

The AltA model will have a high level of interaction between the alternative analysis group and other staff sections within the organization. This will be due to the model's

integration and participation in joint planning groups. Additionally, since there are no additional personnel assigned to conduct alternative analysis, the AltA facilitator and group will be comprised of individuals within the JPG. This interaction will provide the personnel identified as AltA facilitators, AltA members, and the staff with a greater understanding and appreciation for the issues facing the organization. The robust interaction between individuals designated on the alternative analysis team and staff planners will facilitate the building of personal relationships, and help the team overcome organizational obstacles. Overall, due to the ad-hoc nature and requirement to assign individuals among the JPG on the alternative analysis team, there will be a high level of integration between the AltA team and other staff sections within the organization.

The final required condition is red team independence in order to avoid being "captured" by the bureaucracy. The AltA team will have a low level of independence due to the same factors already described for the COMISAF and RC (SW) red teams. Conducting alternative analysis within a joint planning group that is located numerous levels within an organization will not allow the alternative analysis team to maintain a high degree of independence from the organization. Overall, it can reasonably be assessed there will be a low level of independence provided for the AltA team. This must be considered in order to ensure the AltA products are effectively utilized and provides input that aids in decision making and influences how the organization views the problems it is facing.

The advantages to this model include the ability to pick a temporary team to fulfill a temporary requirement within the organization and the ability for the red team to task organize for a specific period of time. This is also in keeping with the Marine Corps tradition of a modular, task organized team able to accomplish a diverse range of missions. Additionally, this

provides the red team with critical functional and regional subject matter expertise that may be lacking within a small standing red team. Considerations include the inability for the team to work together for long periods of time, thereby minimizing the cohesion of the group.

There is no empirical evidence as to the effectiveness of this capability; however, the potential exists for this case study to be instructive for the Marine Corps. If executed as the concept is written, the AltA team will have the opportunity to be effective through robust interaction between themselves and the staff. The AltA team will conduct alternative analysis within the joint planning group, which necessitates interaction between these two teams. Additionally, the potential exists for the generation of AltA products to influence how the organization views the problems it is facing. Finally, once AltA is integrated into the NATO joint planning group, there will be an organizational process that integrates the independent alternative analysis (red teaming) viewpoint, albeit at a much more local level.

An obstacle to AltA's effectiveness will be the limited training the AltA facilitators will receive before having to execute the techniques within a NATO joint planning group. Currently, the AltA facilitator course is one week in length. It will be challenging for any NATO staff officer to understand any of the AltA techniques within this limited timeframe, and then be proficient enough at any techniques to utilize them within a NATO joint planning group. The AltA model has the potential to create facilitators who know next to nothing, and then expect them to be proficient. This model is predicated on the fact that there is no personnel to fill full-time positions so the next best thing is to provide poorly trained facilitators to execute these techniques in a highly stressful, time sensitive environment.

This model has the potential to be most affected due to lack of doctrine and established acceptable standards due to minimal training and lack of permanent personnel. Personal relationships will already be established within this model since its personnel are coming from within the organization; however, the barrier of organizational culture will still exist. Finally, this model will have the least amount of breadth and depth of red teaming knowledge resident within the team relative to any other model. Therefore, it will be essential to maintain reach back capabilities to the larger red team community or other local sources of knowledge to augment the team. Overall, this model is most effective when an organization is constrained on the number of personnel it can provide to conduct red teaming, utilized as a project red team, and focused at a lower level within the organization in order to facilitate robust interaction between the red and blue teams.

Comparison of the Five Models

Overall, all five models have advantages and concerns that must be considered before deciding upon which model will be most effective for the organization, as depicted in Figure 1. The 'Seat at the Table' model is the most effective model for red teaming; however, it requires significant command advocacy and unhindered access to the commander. The 'Hug a Planner' and 'Intel Analyst Gone Wild' models focus at the lower levels of the organization, provide a robust interaction between red and blue teams, and can provide timely generation of red teaming products that influence how the organization views the problems it is facing. However, both models accomplish this in spite of organizational barriers and a lack of processes that integrate independent red teaming viewpoints. The 'Tiger Team' model is most effective when the organization desires a capability to analyze its internal processes. The 'Ad-Hoc' model has the

potential for effectiveness, specifically in providing a robust interaction between the red team

and other staff sections within the organization. However, this model has the greatest potential

for failure due to minimal training and lack of resident knowledge in how to integrate red

teaming within the organization's processes. All models suffer from the absence of doctrine,

established standards, and organizational barriers, and require the building of personal

relationships in order to accomplish its mission. These considerations are the subject of the next

section, which provides recommendations for the effective utilization of red teaming at the MEF

and MEB level.

Red Team Model	Organizational Conditions			Characteristics
	Integration	Interaction	Independence	
"Seat at the Table" *3d MAW fusion cell, 2004-2005*	High	Moderate	High	-Principle staff equivalent -CG advocacy essential -CG's 'trusted agent' -Organization-wide focus
"Hug a Planner" *RC(SW) Red Team, 2011-2012*	Moderate	High	Low	-Sub-directorate w/i G-5 -Utilized early in planning process -Subject to organizational obstacles / bureaucracy -OPT, WG level focus
"Tiger Team" *2d MAW(Fwd) Red Team, 2011*	Low	Moderate	Moderate	-Special staff under COS -Seeking organizational efficiencies -Internal focus on processes and procedures
"Intel Analysts Gone Wild" *COMISAF Red Team, 2011-2012*	Moderate	Low	Low	-Sub-directorate w/i G-2 -Subject to organizational obstacles / bureaucracy -Project-level focus
"Ad-Hoc" *NATO AltA Group, 2011-present*	Moderate	High	Low	-Focus is w/i JPG -Can be utilized throughout staff -Temporary in nature -Project-level focus

Figure 1: Comparison of the five red teaming models

<u>*Recommendations*</u>

Doctrine must be developed. As previously discussed, providing MEF and MEB red teams with the tools to effective accomplish its mission is essential. Currently, red teaming writ large has no overarching guidance or formal set of best practices. While the University of Foreign Military and Cultural Studies publishes a well-written and comprehensive red team handbook for the practitioner, there are no fundamental set of principles by which the red team community can guide their actions in support of MEF or MEB objectives. The perception of constraint by adopting mandated conventional rigid processes lead some to believe it will inhibit some aspects of thought freedom that are considered vital to the red team's resourceful thinking. However, with no proof that process impedes effective red team analysis, the normalization of red teaming through doctrine will only strengthen it in execution. Additionally, doctrine would provide taxonomy of terms and a shared understanding throughout the Marine Corps on the capabilities and limitations of red teaming.

One size does not fit all. Each MEF and MEB needs to decide how it is going to structure, emplace, and utilize its red team. If the MEF leadership has a firm understanding of the capabilities of the red team, and how the team can add value, then the red team will have a greater chance in accomplishing its mission of challenging an organization's way of thinking. How the red team accomplishes its mission is up to the MEF or MEB to decide. As previously mentioned, there are a number of placement options open to the MEF or MEB leadership when deciding where and how the red team will be utilized. This will allow the red team to be more effective at accomplishing its objectives and allow the organization the flexibility to use the red team to maximum effect.

Organizational culture matters. The single greatest facilitator (or obstacle) to effective

red teaming will be directly tied to the culture of the organization. MEF leadership can find

more comfort and trust working within their current networks and processes despite the fact that

the mindset will likely be quiet similar, thus repressing alternative thought. Proven human bias

and cognitive challenges fall to challenges of information being most accepted when it confirms

already held judgments.[60] Additionally, the environment of the organization may suppress the

red team when challenging deeply held assumptions or offering new ideas. "New ideas must

pass over a number of hurdles before it is embraced as an organizational product."[61] The key is

for MEF/MEB leadership to understand and accept this phenomenon, and then take steps to

foster an environment that not only tolerates, but values internal criticism and challenge.

Personal relationships matter…build them early and often. An important task for a red

team is to convince the staff that the team is not a threat; rather, it adds value to their efforts.

This is done in a number of ways, which includes discreet, professional feedback and a

persuasive approach. This does not mean friction will not be produced as a result of a red team

point of view; red teaming by its very nature creates friction. The fundamentally different

mission the red team is chartered to accomplish necessitates an understanding of the importance

of personal relationships, and building those relationships as early and as quickly as possible.

Building personal relationships help the red team overcome organizational obstacles, and

ultimately allow the red team to become more effective.

Utilize the Red Team as an analytic 'maneuver element'. The red team requires the

flexibility and independence to be utilized internally across the organization and externally to

higher, adjacent, and subordinate units. This freedom of movement is essential to provide

horizontal staff integration, maintain situational awareness, and aid in decision-making. Staff

sections tend to get stove-piped and locked into their processes; whereas, if the red team preserves some maneuver space, and maintains the ability to gather fresh, raw data, it will be disproportionately valuable compared to the time invested. This will also help facilitate red team effectiveness and provide the team with greater ability to interact with the 'blue' team.

Red Team diversity. Diversity and multiple perspectives within the red team are essential. The red team gains ideas and insight that a homogenous group would likely not see. Additionally, a blend of personality profiles enhances the team's capabilities and effectiveness. The Multi-National Force-Iraq red team after action review states, "A team that has both introverts-extroverts, innovators-sensing, and so on will be more agile in applying the red team capabilities in support of the organization…an important attribute was the ability to leverage the team's personality diversity to achieve common goals."[62] As the case studies showed, diversity was an essential ingredient in red team effectiveness.

Red Team battle rhythm: Finding the 'sweet spot'. While every team will operate differently, red teams should strive to operate by apportioning its time and resources based on a 'one-thirds' model. This consisted of one-third of a team's time and resources spent on moving through a deliberate roster of pre-planned topics or executing a long-term, command deck chartered study. Another third will be spent on 'pop-up' tasks as the MEF/MEBs mission and battle rhythm evolves. Finally, one-third of a team's effort should be based on self-generated opportunities, leveraging the team's organic expertise of its diverse membership, and its ability to 'float' across different staff sections and identify relevant but unaddressed topics. This will ultimately make the red team more effective, and also allow the team to create opportunities to influence how the organization views the problems it faces.

Adaptability is essential. This insight is hardly unique to red teaming, but worth emphasizing. Every MEF and MEB staff is different; moreover, the same staff will behave differently at different points due to a new mission focus or unanticipated event. Therefore, the red team must retain the ability to adapt and evolve to the requirements placed upon it. Red teaming has no formal doctrine and is one of the least defined capabilities within the MEF and MEB staff. These conditions present opportunities to adapt and evolve the concept within this particular operational space and time in order to remain relevant to the Commander and his staff.

The role of the MAGTF Staff Training Program (MSTP). MSTP must play a critical role in establishing, maintaining, and ensuring red teams within MEFs and MEBs are prepared and understand their role within the organization. Additionally, MSTP must provide the MEF and MEB leadership with information regarding best practices and effective utilization of red teams. This information should be specific and based on the needs of each individual MEF or MEB. Additionally, it must provide a recommendation to each MEF or MEB on red team placement options in order to ensure MEF and MEB red teams are effectively utilized and provide the organization with timely and relevant input that aids decision making and influences how the organization views the problems it is facing.

Conclusion

The lack of knowledge and understanding on how red teaming can be executed and methods that can be employed at the Marine Expeditionary Force (MEF) and Marine Expeditionary Brigade (MEB) level in order to facilitate mission accomplishment for the red team are an obstacle for the concept to fully be implemented. Conceptually, what a red team does seems straightforward; however, how it does its job and how the organization's mission

focus determines placement of the red team within the organization is lacking within the body of literature written on red teaming. Additionally, is also concluded that the notion of direct and frequent access to the commander is not an essential requirement for the red team to be successful. Early, iterative, and professional feedback, which challenges the organization's prevailing notions at an 'oblique angle', will help build an enhanced situation understanding, provide value to the process, and build credibility for the red team. Finally, ensuring effective red teaming necessitates an organizational understanding of how, when and where the red team can provide the greatest contribution to the critical processes of the organization. This requires a decision by the senior leadership of the organization on where to place the red team within the organization, what areas the red team will focus on, and how the red team will interact with the rest of the organization.

The red team is chartered with a completely different mission than any other staff section within a MEF or MEB. Its tasks include challenging an organization's prevailing notions, rigorously test current TTPs, and counter groupthink in order to ultimately increase their organization's effectiveness, improve decision making, and aid in accomplishing the organization's end state. The red team accomplishes this by gaining the trust of other staff officers within the organization, maintaining their credibility by producing salient, timely products, and effectively communicating their findings in a way that can be constructively implemented within the organization's critical processes.

APPENDIX A: Recommended red team mission, Mission Essential Task List, and operational approach

The following is a recommended MEF and MEB red team mission statement, Mission Essential Task List, and an operational approach as depicted in Figure 2.

Mission statement:
Provide (respective MEF/MEB) with a capability that challenges prevailing notions, counters group think and provides independent perspectives in order to enhance decision making and increase organizational effectiveness.

Mission Essential Task List:
1. Assist in planning and future operations
1.1 Improve problem identification
1.2 Improve end state definition
1.3 Identify gaps, vulnerabilities, opportunities, and strengths
1.4 Verify and/or challenge planning assumptions
1.5 Promote horizontal staff integration

2. Conduct independent analysis and review
2.1 Participate in OPORD crosswalk & critical review of select annexes
2.2 Conduct directed studies
2.3 Perform independent reviews
2.4 Identify unintended consequences and 2nd/3rd order effects

3. Analyze the operational environment
3.1 Identify critical variables within the operational environment
3.2 Improve problem identification
3.3 Broaden understanding of the variables found in the OE including perspectives of relevant actors

Figure 2: Operational Approach for MEF and MEB red teams

Planning and Future Operations

1.1 Improve problem identification

1.2 Improve end state definition

1.3 Identify gaps, vulnerabilities, opportunities and strengths

1.4 Challenge planning assumptions

1.5 Promote horizontal staff integration

Critical Analysis and Review

2.1 Participate in OPORD crosswalk & review of select annexes

2.2 Conduct directed studies

2.3 Perform independent reviews

2.4 Identify unintended consequences and $2^{nd}/3^{rd}$ order effects

Operational Environment

3.1 Identify critical variables within the operational environment

3.2 Improve problem identification

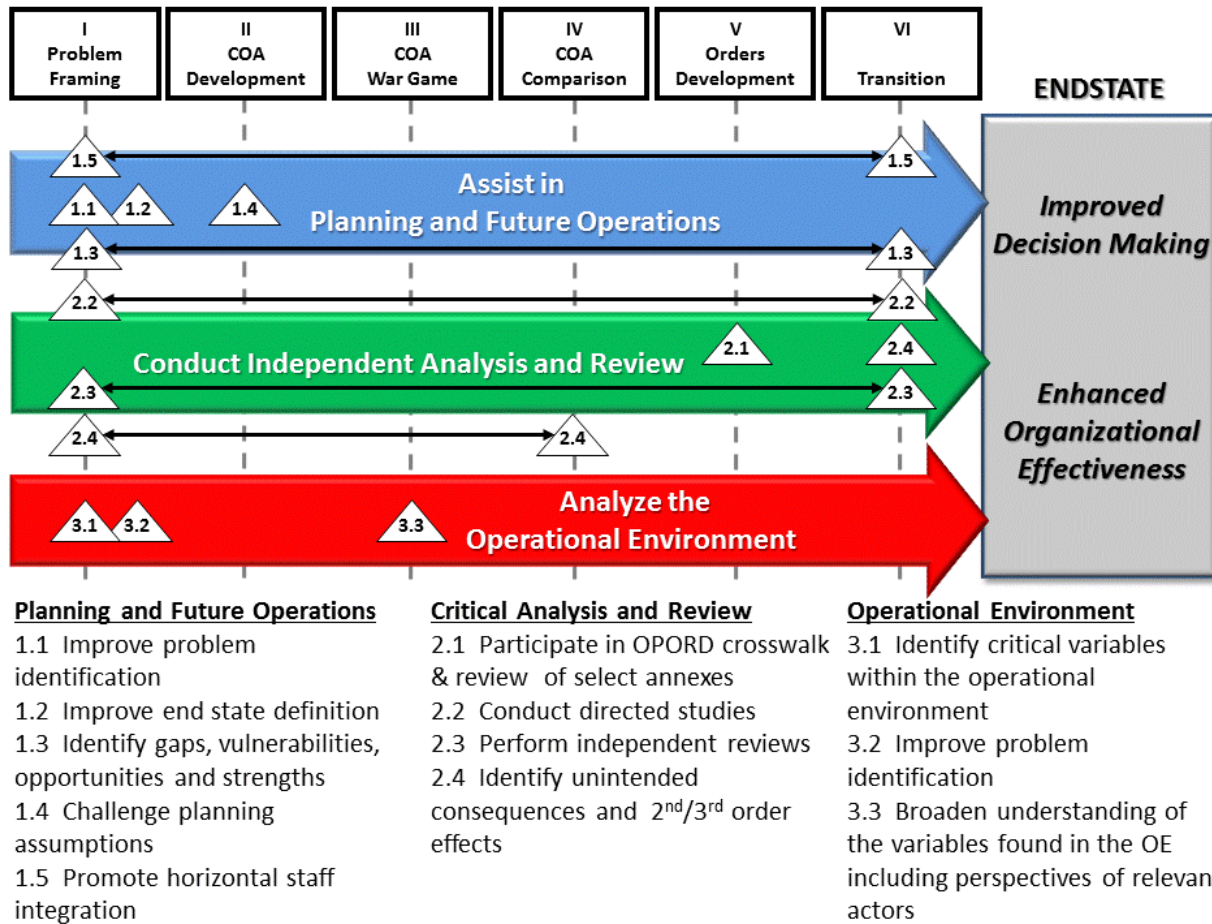3.3 Broaden understanding of the variables found in the OE including perspectives of relevant actors

APPENDIX B: Red Teaming and the Marine Corps Planning Process

While the Red Team is not an 'OPT Red Team', it is useful to begin mapping new ways to contribute using the Marine Corps Planning Process (MCPP) as an organizing framework. Additionally, utilizing MCPP as a framework does not relegate the red team to merely a 'planner's aid', MCPP is used to provide a doctrinal anchor and a common point of departure for discussing and examining red teaming within the Marine Corps. The following describes a menu of potential red team inputs, actions, and examples throughout each step of MCPP, as depicted in Figure 3.

During the Problem Framing step of MCPP, the red team can collaboratively assist planners in problem framing, or independently assist in problem framing as a breakout team. Additionally, it can validate or challenge assumptions in discussion, provide an independent review of key information or actions, actively participate within an OPT or WG, and provide feedback to OPT or WG leaders.

During Course of Action development, the red team can collaboratively assist in staff development of the COAs, or independently develop alternative COAs as a breakout team. Additionally, it can identify potential unintended consequences generated by COAs, validate or challenge assumptions, or provide an independent review of key information or actions. The red team can also actively participate within an OPT or Working Group, and provide feedback to OPT or WG leaders.

During Course of Action war gaming, the red team can assist in the development of war game scenarios and emulate sources of blue team friction (enemy, HN population, HN government, and other relevant internal or external actors) in order to identify gaps, vulnerabilities, opportunities, and strengths of each COA. Additionally, the red team can

augment the existing intelligence section red cell in order to provide the command a more developed thinking enemy during the execution of the war game.

Within the Course of Action Comparison and Decision step of MCPP, the red team can ensure the proposed COAs account for critical variables within the operational environment, and provide an independent review of key information or actions. Additionally, the red team can actively participate within an OPT or Working Group and provide feedback to OPT or WG leaders.

During the Orders Development step of MCPP, the red team can assist in conducting an orders crosswalk to identify gaps, disconnects or vulnerabilities to the plan based on a critical review of the base order and annexes. In addition, it can ensure linkage of staff actions to the desired end state.

During Transition, the red team can participate in branch and sequel planning in order to help identify unintended consequences, or provide an independent review of branch and sequel planning. Additionally, directed studies can be conducted throughout any step of the MCPP.[63]
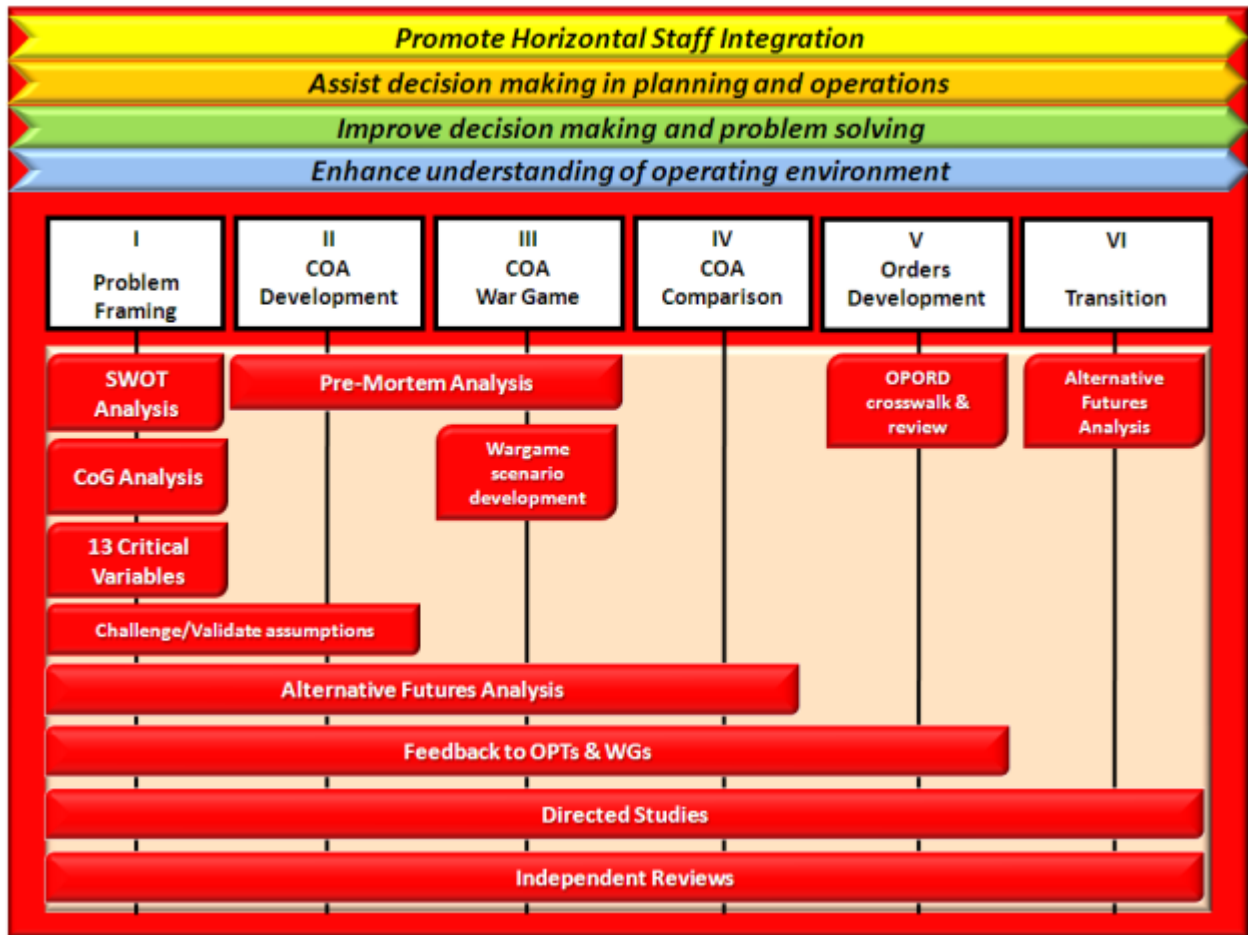
Figure 3: Red Team products and the Marine Corps Planning Process

APPENDIX C: Project Red Team vs. Enterprise Red Team

   This appendix contrasts a project red team and an enterprise red team. There are

fundamental differences between each, and an understanding of both facilitates a decision by

MEF or MEB leadership on which type of red team it will choose to utilize, and when. Of note,

the '*Seat at the Table*' model discussed in this monograph is an example of an enterprise red

team. All other models discussed are examples of project red teams.

   The decision to utilize one type or the other is based on specific attributes, as depicted in

Figure 4. The attributes include significance to organization's existence; scope of red team;

success or cost of failure to the organization; executive sponsor or advocate; nature of

assumptions that will be challenged; tradeoffs; mental framework; team leader characteristics;

team composition, and nature of project or problem.[64] The table highlights differences in these

attributes between a project and enterprise red team. These attributes provide MEF or MEB

leadership a foundation when deciding upon which type of red team is needed within each

organization; however, they are not mutually exclusive. Some attributes detailed within a project

red team can also be present within an enterprise red team, and vice versa. Additionally, this

table is not prescriptive; a MEF or MEB red team can be utilized in both capacities, as required.

Therefore, it is critical MEF or MEB leadership understands of how to utilize their red team,

based on their specific requirements and unique situation.

ATTRIBUTE	PROJECT RED TEAM	ENTERPRISE RED TEAM
SIGNIFICANCE	Important, urgent, not terminal to organization	Existence in jeopardy (overall mission failure), perhaps over several years
SCOPE	Projects within organization; less than 50% of enterprise	Affects >75% of organization; its place within institution, what its known for in the past
SUCCESS/COST OF FAILURE	Lower cost or time; better function or quality; may miss opportunity	Unknown for year; unclear; end of the enterprise is the risk, overall mission failure
EXECUTIVE SPONSOR	Chief of Staff, Staff directorate, sub-directorate, program manager	Commanding General
ASSUMPTIONS	About design rules, cost, time, quality and their importance within an OPT, JPG, or WG.	Values; capacity to change; available leadership, will, skill, external trends
TRADEOFFS	Cost vs. Time, Function vs. Quality	Politics, power, history, risk of error, investment, people, current vs. future
MENTAL FRAMEWORK	Mission, intermediate objectives, shorter time horizon	External trends, internal values, campaign objectives, long time horizon
TEAM LEADER	Good leader, manager, critical thinker	Trusted agent, Strategic thinker, organizer, critical thinker
TEAM COMPOSITION	Diverse backgrounds, functional / regional expertise	Executive, planner, political, behavior, technology trends (plus same as project)
PROJECT / PROBLEM	Specific, scheduled, followed	Unclear; blind alleys; exploratory

Figure 4: Characteristics of Project and Enterprise Red Teams

APPENDIX D: Bibliography

Amos, James. *35th Commandant of the Marine Corps Planning Guidance*. Headquarters United States Marine Corps. Washington, DC: Government Printing Office, 2010.

Ariely, Dan. *Predictably Irrational.* New York, NY: Harper Perennial Publishing, 2010.

Batshelete, Allen, Barry Hafer, and Mike Runey. "Risking Critique: Red Teaming makes open criticism normal in military culture," *Armed Forces Journal*, November 2007.

Browne, M. Neil, and Stuart M. Keeley. *Asking the Right Questions: A Guide to Critical Thinking, 10th Edition.* New York, NY: Longman Publishing, 2011.

Campbell, Andrew J. "Friendly Opposition: The Red Team's Role in Strengthening Operational Design." Air Command and Staff College Monograph, US Air Force Air University, 2010.

Cialdini, Robert B. *Influence: The Psychology of Persuasion.* New York, NY: Harper Collins Publishers, 2007.

Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction. *Report to the President of the United States*. Washington, DC: Government Printing Office, 2005.

Craig, Susan. "Reflections of a Red Team Leader." *Military Review*, March-April 2007.

Dormer, Dietrich. *The Logic of Failure: Why Things Go Wrong and What We Can Do To Make Them Right.* New York, NY: Metropolitan Books, 1996.

Flin, Rhonda, Eduardo Salas, Michael Strub, Lynn Martin, eds. *Decision Making Under Stress.* Hants, UK: Ashgate Publishing, 1999.

Fontenot, Gregory. "Seeing Red: Creating a Red-Team Capability for the Blue Force." *Military Review*, vol 85, no. 5, September 2005.

Gold, Ted, and Bob Hermann. *The Role and Status of Department of Defense Red Teaming Activities*, Washington D.C.: Office of the Under Secretary of Defense of Acquisition, Technology, and Logistics, Defense Science Board Task Force, 2003.

Greener, Peter, and Jeff Stouffer, eds. *Decisionmaking: International Perspectives.* Kingston, Ontario: Canadian Defence Academy Press, 2009.

Hartford, Tim. *Adapt: Why Success Always Starts with Failure*. New York: Farrar, Straus and Giroux, 2011.

Headquarters Supreme Allied Command Transformation, North Atlantic Treaty Organization. *Alternative Analysis Staff Handbook, draft*. 11 October 2012. Norfolk, Virginia: Assistant Chief of Staff, Engineering, Operational Analysis Branch.

Heuer, Jr, Richards. *Psychology of Intelligence Analysis*. New York: Novinka Books, 2006.

Heuer, Jr, Richards J, and Randolph H. Pherson. *Structured Analytic Techniques for Intelligence Analysis.* Washington, DC: CQ Press, 2011.

Janus, Irving L. *Group-Think: Psychological Studies of Policy Decisions and Fiascos.* Boston, MA: Houghton Mifflin Company, 1982.

_____. "Victims of Group-Think." *Political Psychology*, vol 12, no. 2, June 1991.
John, Miriam, and Robert Stein. *Report of the Defense Science Board Task Force on Capability Surprise Volume I: Main Report*, Office of the Undersecretary of Defense for Acquisition, Technology, and Logistics. Washington, DC: September 2009.

Johnson, Phillip M. "Effects of Groupthink on Tactical Decision-Making." School of Advanced Military Studies Monograph, US Army Command and General Staff College, 2001.

Klein, Gary A. *Sources of Power: How People Make Decisions*. Campbridge, MA: MIT Press, 1999.

Kumar, Vijay. *101 Design Methods: A Structured Approach for Driving Innovation in Your Organization*. Hoboken, NJ: John Wiley & Sons, Inc, 2013.

Lauder, Matthew. "Red Dawn: The Emergence of a Red Teaming Capability in the Canadian Forces," *Canadian Army Journal*, Vol 12, no. 2, 2009.

Lefever, Lee. *The Art of Explanation.* Hoboken, NJ: John Wiley & Sons, Inc, 2013.

Longbine, David F. "Red Teaming: Past and Present." School of Advanced Military Studies Monograph, US Army Command and General Staff College, 2008.

Malone, Timothy G., and Reagan E. Schaupp. "The 'Red Team': Forging a Well-Conceived Contingency Plan," *Aerospace Power Journal*, Summer 2002.

MAGTF Staff Training Program, *MSTF Pamphlet 2-0.1, Red Cell – Green Cell*. October 2011.

March, James G., and Roger Weissinger-Baylon. *Ambiguity and Command.* Marshfield, MA: Pittman Publishing, Inc, 1986.

Mulvaney, Brendan. "Red Teams: Strengthening through challenge." *Marine Corps Gazette*, July 2012.

Murray, Williamson. "Red Teaming: Its Contributions to Past Military Effectiveness." Defense Adaptive Red Team (DART), Working Paper #02-2. McLean, VA: Hicks and Associates, Inc., 2002.

_____. "Thoughts on Red Teaming." Defense Adaptive Red Team (DART), Working Paper #03-2. McLean, VA: Hicks and Associates, Inc., 2003.

Murray, Williamson, and Richard Hart Sinnreich, eds. *The Past as Prologue: The Importance of History to the Military Professional.* New York:Cambridge University Press, 2006.

Neustadt, Richard, and Ernest R. May. *Thinking In Time.* New York, NY: The Free Press, 1986.

Nisbett, Richard E. *The Geography of Thought: How Asians and Westerns Think Differently…and Why.* New York, NY: The Free Press, 2003.

Rabe, Cynthia Barton. *The Innovation Killer: How what we know limits what we can imagine… and what smart companies are doing about it.* New York, NY: AMACOM, 2006.

Ranyard, Rob, W. Ray Crozier, and Ola Svenson, eds. *Decisionmaking: Cognitive Models and Explanations.* London, UK: Routledge Press, 2001.

Sandoz, John F. "Red Teaming: A Means to Military Transformation." Institute for Defense Analysis, Joint Advanced Warfighting Program, January 2001.

Senge, Peter M. *The Fifth Discipline: The Art & Practice of The Learning Organization.* New York, NY: Doubleday Publishing, 1990.

Smith, Cynthia, Lee Schnell, Timothy McGowan, Christian von Wupperfeld, and Desiree Huitt. "MNF-I CJ5 Red Team: After Action Review (July 2008 to September 2009)." Multinational Forces – Iraq, Combined Joint Plans Section, Red Team unpublished report, September 2009.

Snyder, Jack. *Ideology of the Offensive.* Ithaca, NY: Cornell University Press, 1984.

US Department of Defense. Joint Publication 2-0, *Joint Intelligence*, 22 June 2007.

US Department of Defense. Joint Publication 5-0, *Joint Operations Planning*, 11 August 2011.

US Department of Defense, Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 2011.

US Army Training and Doctrine Command. "TRADOC Information Pamphlet: Red Teaming." Fort Monroe, VA: TRADOC Public Affairs Office, 2007.

US Department of the Army. Army Doctrinal Reference Publication 5-0, *The Operations Process*, 17 May 2012.

US Department of the Army. Army Tactics, Techniques, and Procedures 5-0.1. *Commander and Staff Officer Guide*, September 2011.

US Department of the Navy. Marine Corps Warfighting Publication 5-1, *Marine Corps Planning Process*, 24 August 2010.

University of Foreign Military and Cultural Studies. *Red Team Handbook: Version 6.0.* Fort Leavenworth, Kansas: U.S. Army Training and Doctrine Command, 2012.

Wilson, James Q. *Bureacracy.* New York, NY: Basic Books Publishing, 2000.

Endnotes

[1] James Amos, *35th Commandant of the Marine Corps Planning Guidance.* Headquarters United States Marine Corps, 2010, 12.

[2] Ted Gold and Bob Hermann. *The Role and Status of Department of Defense Red Teaming Activities*, Washington D.C.: Office of the Under Secretary of Defense of Acquisition, Technology, and Logistics, Defense Science Board Task Force, 2003, 5-6.

[3] Williamson Murray, "Thoughts on Red Teaming," Defense Adaptive Red Team, Working Paper #03-2, 2003, 1.

[4] Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction, *Report to the President of the United States* (Washington, DC: Government Printing Office, 2005), 170.

 Stephen T. Hosmer, "Why the Iraqi Resistance to the Coalition Invasion was so Weak," RAND Corporation, Project Air Force, 2007, 132.

[5] Gold and Hermann, 2.

[6] Gold and Hermann, 17.

[7] Williamson Murray, "Red Teaming: Its Past Contribution to Military Effectiveness," Defense Adaptive Red Team, Working Paper #02-2, 2002, 1.

[8] Murray, 2.

[9] Brendan Mulvaney, "Red Teams: Strengthening through challenge", *Marine Corps Gazette*, July 2012, 63.

[10] *Red Team Handbook, Version 6.0*, University of Foreign Military and Cultural Studies, Fort Leavenworth, Kansas: US Army Training and Doctrine Command, 2012, 11.

[11] *Red Team Handbook, Version 6.0*, 2.

[12] Ron Rega, "Red Teaming within RC (SW)," PowerPoint presentation, II MEF (Forward), 11 January 2011, 4.

[13] Amos, 12.

[14] Amos, 12.

[15] Amos, 12.

[16] Mulvaney, 65.

[17] *Red Team Handbook, Version 6.0*, 3.

[18] Williamson Murray and Richard Hart Sinnreich, *The Past as Prologue: The importance of history to the military profession.* Cambridge University Press: New York, 2006, 3.

[19] James Q. Wilson, *Bureaucracy*, 1989, 91.

[20] Dan Hellriegel and John Slocum, *Organizational Behavior,* (South-Western College Publications, 2007), 421.

[21] Gregory McNeal, "Organizational Culture, Professional Ethics and Guantanamo," *Case Western Reserve Journal of International Law,* Vol. 42 (2009), 127.

[22] Gold and Hermann, 6.

[23] Williamson Murray, "Red Teaming: Its Past Contribution to Military Effectiveness," Defense Adaptive Red Team, Working Paper #02-2, 2002, 11.

[24] Williamson Murray, "Red Teaming: Its Past Contribution to Military Effectiveness," Defense Adaptive Red Team, Working Paper #02-2, 2002, 11.

[25] Wilson, 110.

[26] Wilson, 101.

[27] Allen Batschelet, Mike Runey and Barry Hafer, "Risking Critique: Critical review and alternative perspectives on the battlefield", *Armed Forces Journal*, 2007.

[28] Susan Craig, "Reflections from a Red Team Leader", *Military Review*, March-April 2007, 60.

[29] Amos, 12.

[30] Headquarters Supreme Allied Command Transformation, North Atlantic Treaty Organization. *Alternative Analysis Staff Handbook, draft*. 11 October 2012. Norfolk, Virginia: Assistant Chief of Staff, Engineering, Operational Analysis Branch.

[31] MAGTF Staff Training Program, *MSTF Pamphlet 2-0.1, Red Cell – Green Cell*. 2011.

[32] *Red Team Handbook, Version 6.0,* 1.

[33] *Red Team Handbook, Version 6.0*, 6.

[34] Mulvaney, 64.

[35] Gold and Hermann, 6.

[36] Richards J. Heuer, *Psychology of Intelligence Analysis*, 2006, 16.

[37] Williamson Murray, "Thoughts on Red Teaming," Defense Adaptive Red Team, Working Paper #03-2, 2003, 2.

[38] Richards J. Heuer and Randolph H. Pherson, *Structured Analytic Techniques for Intelligence Analysis*, 2011, 5.

[39] Mulvaney, 64.

[40] Mulvaney, 64.

[41] Mulvaney, 64.

[42] Third Marine Air Wing Shaping/Fusion cell, "Update for Major General Amos", PowerPoint presentation, 2004, 3.

[43] Third Marine Air Wing Shaping/Fusion cell, 4.

[44] Third Marine Air Wing Shaping/Fusion cell, 4.

[45] Third Marine Air Wing Shaping/Fusion cell, 5.

[46] Third Marine Air Wing Shaping/Fusion cell, 8.

[47] Third Marine Air Wing Shaping/Fusion cell, 3.

[48] Third Marine Air Wing Shaping/Fusion cell, 3

[49] James Traver, conversation with author, 1 December, 2010.

[50] Gold and Hermann, 24.

[51] James Traver, telephone interview with author, 13 April, 2011.

[52] 2nd MAW (Fwd) red team leader, interview with author, 15 January, 2011.

[53] 2nd MAW (Fwd) red team leader, interview with author, 15 January, 2011.

[54] 2nd MAW (Fwd) red team leader, interview with author, 15 January, 2011.

[55] Benjamin Jensen, interview with author, 5 February, 2013.

[56] John Angevine, interview with author, 28 February, 2012.

[57] Benjamin Jensen, interview with author, 5 February, 2013.

[58] Benjamin Jensen, interview with author, 5 February, 2013.

[59] *Alternative Analysis Staff Handbook*, 1.

[60] Richards J. Heuer, *Psychology of Intelligence Analysis*, 2006, 23.

[61] Richards J. Heuer, *Psychology of Intelligence Analysis*, 2006, 89.

[62] Multi-national Force-Iraq Red Team, "After Action Review", 08 September 2009, 9.

[63] Ron Rega, "Red Teaming in Regional Command (South West): A Practitioner's Perspective", manuscript, II MEF (Forward), 2011, 4.

[64] Gold and Hermann, 23.