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A Concept for Information Operations

Future Marine forces must remain capable of operating effectively across the full range of operations, against a myriad of potential adversaries. This revision of ***A Concept for Information Operations*** again focuses on a 21st century information environment of unprecedented complexity, and seeks to identify the essential information operations activities that we must pursue to enable and enhance our warfighting functions of command and control, fires, maneuver, logistics, intelligence, and force protection. This concept is intended to promote discussion, and to serve as the catalyst for the process of research and experimentation through which new required operational capabilities will be developed. Future advances in information operations capabilities—in tandem with improvements in other warfighting areas—will be leveraged by our forward deployed commanders to enable the decisive actions envisioned by ***Expeditionary Maneuver Warfare.***

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A CONCEPT FOR INFORMATION OPERATIONS

Introduction

The Marine Corps warfighting philosophy of maneuver warfare seeks to shatter the enemy's cohesion through a series of rapid, violent, and unexpected actions that create a turbulent and deteriorating situation with which he cannot cope. Future Marine Corps information operations (IO) will support maneuver warfare through actions that use information in support of our National Military Strategy to deny, degrade, disrupt, destroy or influence an adversary commander's methods, means or ability to command and control his forces, while defending our own. IO will also seek to inform target audiences through informational activities. In the future, IO conducted by Marine Air Ground Task Forces (MAGTFs) will consist of battlespace shaping, force enhancement, and force protection activities. Information operations will enhance the ability of the MAGTF to project power during peace and war, and will complement and facilitate the traditional uses of military force. MAGTFs will execute IO to enable and enhance their ability to conduct military operations consistent with our capstone concept, *Expeditionary Maneuver Warfare (EMW).* The goal is to support our nation's military strategy across the full range of operations.

Emerging concepts for the application of IO are abundant and varied. Since IO are conducted both within and beyond the traditional military battlefield, some of these new ideas feature IO as a supporting function, or even present IO as an entirely "new" domain of warfare altogether. Clearly, the use of information to one's advantage in warfare is not new; what is new are the "tools" in use now—and in the future—to engage in IO. Therefore, our concern is that once a military becomes entrenched in sophisticated technologies, it is easy to lose sight of military strategic thinking and those timeless combat skills that are needed to win battles. Yet despite this potential pitfall, we will not ignore the impact of new technologies, and the continually changing global environment in which we will operate. We will seek to temper these ideas, capturing them within the context of our overall maneuver warfare philosophy and expeditionary culture, both of which are embodied in EMW. Our emphasis will be on recognizing the potential for IO as a critical enabler, and integrating it into an expanded operational planning mindset that supports both Marine Corps' operational requirements and the joint force commander's (JFC's) needs. Information operations, whether shaping the battlespace to deter conflict or enabling decisive maneuver, must be recognized as an essential and potentially dominant activity.

Information operations at all levels must be carefully planned and fully integrated. MAGTFs must be organized, trained, and equipped to conduct IO in support of a national or theater campaign and in direct support of combat operations. Yet, from the Marine Corps' perspective, IO is not a warfighting function in its own right; it is an integrating concept that *facilitates* the warfighting functions of command and control, fires, maneuver, logistics, intelligence, and force protection. It is not simply another arrow in the MAGTF commander's quiver, but is a broad-

based integrative approach that makes the bow stronger. This distinction is key to our belief that IO does not, and will not, *replace* any of the time-tested warfighting functions—it will *enable* each of them. Thus, the focus of Marine Corps IO will be upon the information-oriented activities that will best support the tailored application of combat power.

A Changing World

The world is going through dynamic changes; events that will fundamentally change the future operational environment in which Marine forces will deploy, respond to crisis, and fight. These changes have been initiated by many factors: the changing global environment, trends in technology, the emergence of non-traditional adversaries, and the Marine Corps' increasing involvement in humanitarian assistance and peace operations. Each of these factors will contribute to a new, and increasingly complex, operational environment.

Global Environment

The current trend in global politics is toward increased fragmentation—the breakup of multinational states into smaller, national groups with regional power centers having narrower communities of interest. Fragmentation is rarely a smooth process, as existing states often resist the loss of authority, the drawing of new boundaries, and the creation of new associations and coalitions between both state and non-state actors. As a consequence, the interests of different groups invariably overlap and conflict, making the satisfaction of all concerned parties a difficult goal to attain. Fragmentation has significantly complicated and transformed the face of global politics and this trend is likely to continue in the future.

A second major trend in global relations is integration, or "interconnectedness." Even as the world fragments politically, it is becoming increasingly connected through information networks and the resulting development of unique collaborations based upon common economic goals. Driven principally by the information revolution, the widespread dissemination of culture, ideas, goods, and services on a global scale will continue to have an integrative effect. Communications technologies will provide near-instantaneous worldwide connectivity and access to goods and services, encouraging global markets and broad economic integration. Global communications will also accelerate and expand the world's collective awareness of events and issues, and will make it increasingly difficult for totalitarian regimes to hide behind their traditional shrouds of secrecy and disinformation. However, the expanded information domain can also empower the adversary who learns to exploit it to his advantage.

Neither of these trends exists in isolation. In fact, they tend to interrelate—each fostering the growth and expansion of the other. Increased political fragmentation creates greater need for interconnectedness; and, in turn, greater interconnectedness produces increased desire for autonomy, or political fragmentation. Together, these trends point toward an increasingly dynamic and complex future international environment.

Trends in Technology

Rapid advances in technology have produced an incredibly complex information environment. Routine decisions and interactions have been defaulted to computers in the pursuit of simplicity and speed. Global communications are ubiquitous—e.g., the Internet, satellite/cellular telephones, direct-broadcast television—and have expanded the collective awareness of events, issues, and concerns. Connectivity through global communications will ignite passions, spark perspectives, crystallize beliefs, and compel people, nations, organizations, and institutions everywhere to think and act in accordance with the perspectives and often the biases of those with whom they interact. While much of this phenomenon may be benign and beneficial, it renders users

> **The threats to the information infrastructure are genuine, worldwide in origin, technically multifaceted, and growing.**

exploitable.

The United States is at the forefront of exploiting technology to harness the explosive potential of rapid collection, processing, dissemination, and use of information. The U.S. economy, social and civil structures, and governments at all levels have become dependent upon the rapid and accurate flow of information. America exerts extraordinary world influence through its pervasive media and entertainment industries, yet is influenced by similar pressures exerted from outside its borders. The global information infrastructure electronically links organizations and individuals around the world and is characterized by a merging of civilian and military information networks and technologies.

The U.S. military no longer drives the development of information technologies. Commercial off-the-shelf technologies are increasingly important to maintaining the U.S. Armed Forces' technological edge. However, these same technologies are readily available to potential adversaries, and these adversaries will be increasingly inventive in adapting these technologies to meet their own operational needs. Although technology may create unprecedented missions and functions for Marine forces, it is not a panacea and Marines must seek to discover and exploit these new possibilities through a program of aggressive experimentation and operational adaptation.

Developments in information technology revolutionize how nations, organizations, and people interact. The rapid diffusion of information challenges the relevance of traditional organizational and managerial principles. The military implications of new organizational sciences that examine networked vice hierarchical management models are yet to be fully understood. Information Age technology and the ideas it fosters will greatly influence how military forces organize, equip, train, fight, protect their forces, and assist in resolving conflict.

Threats to the information infrastructure will come from those motivated by military, political, social, cultural, ethnic, religious, economic, and even personal gain. The globalization of networked communications creates new vulnerabilities, as does the world's increasing dependence upon high volumes of timely, accurate information. The MAGTF's increasing linkages to the expanding information infrastructure from points around the world will expose it to threats from a variety of new and different sources on a continuing basis, even during periods of relative peace. Yet, these potential vulnerabilities can also translate into opportunities because of the potential for a future adversary to have a similar dependence upon information and information systems.

The information revolution will present both dangers and opportunities. These dangers may be exacerbated by a belief that technology can solve all problems. Used unwisely, technology can become a part of the problem and can contribute to information overload, micro-management, and the dangerous illusion that certainty and precision in war are both desirable and attainable. Furthermore, all systems that support command and control are potentially vulnerable to enemy action—not only to the physical destruction of facilities and personnel, but also to exploitation and disruption through misinformation, spoofing, hacking, jamming, and other aspects of information warfare. Used wisely, technology is part of the solution and can provide new opportunities. Opportunity lies in "gaps" found in potential adversaries' systems, which the MAGTF will seek to aggressively exploit. Opportunity also lies in the combination of technology and operational wisdom to truly integrate and optimize our warfighting functions, thus achieving tactical dominance through advances in speed, mobility, fire support, communications, surveillance, and intelligence that the adversary cannot match. Yet the key opportunity lies in influence: winning the battle of wills without the use of force.

Future Adversaries

Ten years after the fall of the Berlin Wall, the United States' illusion that the Post-Cold War era was one of "relative peace and security," was shattered by the events of 11 September 2001. It is no surprise to Marines that those who are willing to perpetrate such atrocities exist. The occurrence of terrorism serves to firmly underscore our expectations about future adversaries, and validate the fact that the world strategic environment remains a complex and potentially dangerous realm. Although the threat of global war has receded, Marines still expect to face a range of traditional and non-traditional threats in the future. Ethnic, religious, economic, social, and environmental strains will continue to cause instability and raise the potential for violence. Many countries and non-state actors will retain the capability to threaten U.S. interests both at home and abroad, and may again directly seek to initiate a major conflict that would demand a large-scale U.S. response. In addition, there will be many other "lesser threats" that will seek to engage us obliquely across the range of operations that fall short of war. Many of these adversaries will possess regional, national, even worldwide levels of influence, and will likely have access to the plethora of lethal technologies generally available on the global market.

In addition to terrorists, other non-traditional adversaries could include drug cartels, computer hackers, and rogue nations, in addition to countless other agents who might act independently in their own self-interests. Using new technologies and readily available information, these

threats—both known and nameless—will have the capability to instantaneously threaten the U.S. across geographic borders through networks and the proliferation of weapons of mass destruction. Most will choose to avoid direct military confrontation, attacking selected vulnerabilities in order to achieve high payoff for little cost. Yet even the cunning, low-tech adversary can be a threat to us, especially if we are caught languishing in "technological euphoria." In sum, it is very likely that many of the vulnerabilities our adversaries will attempt to exploit will be information-oriented.

Future Missions

The U.S. maintains a wide range of humanitarian and global security responsibilities, and these responsibilities will continue well into the future. Marines can expect to be tasked to provide humanitarian assistance after a disaster; to provide peace support for nations that seek a secure environment to peacefully develop; to provide peace enforcement to separate warring factions; to create conditions for the peaceful resolution of a crisis; and finally, to project combat power when resolving a crisis that requires the threat, and/or use of force. As a crisis develops, Marines may find themselves executing more than one mission at a time, or multiple missions in rapid sequence. They may be asked to provide relief to civilians while keeping belligerents separated, defending U.S. interests, and enforcing international law. To project power and influence, Marine forces employ for presence, engagement, and response. Each of these employment concepts will have a strong informational component. The on-scene presence of the forward-deployed MAGTFs—and their proximity and access to potential crisis areas—will establish them as vital operational and informational "cornerstones" for follow-on forces acting as part of a national and theater crisis response.

Conversely, events such as the 11 September attack—coupled with increasing acceleration toward the future asymmetric environment—demand that we consider the reality that some adversaries will again seek to attack us on our own soil. Marines will be prepared to provide both military and informational support to U.S. civilian authorities, in accordance with guidelines and in coordination with appropriate national, state, and local agencies.
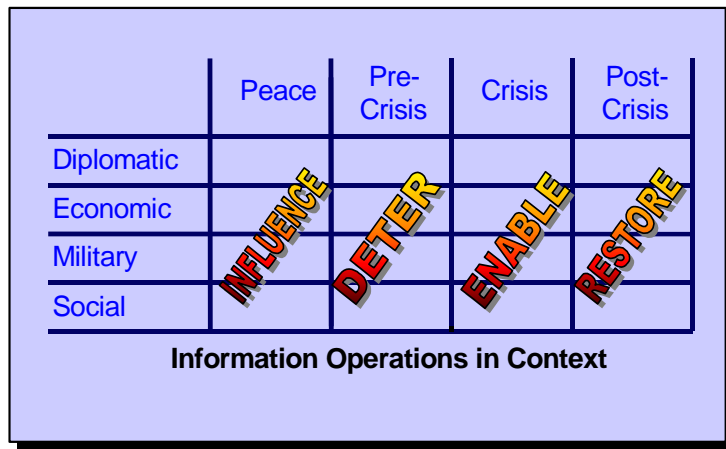
Information Operations

Information operations involve actions taken to affect adversary decision processes, information, and information systems while defending our own. Information, as data, is a key component of combat, communications, and intelligence systems. Information transformed into knowledge and understanding is a key component of command and decision-making processes. Information, as media, influences perceptions, and attitudes, and crystallizes beliefs. The scope of IO is

expansive and permeates strategic through tactical operations. IO, in its many forms, is applicable across the full range of military operations.

At the strategic level, IO will be included in the myriad activities directed by the National Command Authorities (NCA) to achieve national objectives by influencing or affecting key facets of an adversary's power. As a forward-deployed element of our national power, the MAGTF could be expected to facilitate, enable or conduct IO at the operational and tactical levels to achieve or support strategic/operational objectives of the NCA, commanders-in-chief (CINCs), and the JFC. This will require a high degree of coordination between all involved military, government, and non-government agencies.

Peacetime IO can be used to influence our adversaries through regional engagement and influence operations to help shape the strategic environment (see figure). Additionally, it can be used to impart a clearer understanding and perception of our mission and its purpose. In the pre-crisis stage, IO can help deter adversaries from initiating actions detrimental to the interests of the United States or its allies. Carefully conceived, coordinated, and executed, pre-crisis IO can make an important contribution to defusing potential crises before they can escalate, thus

	Peace	Pre-Crisis	Crisis	Post-Crisis
Diplomatic				
Economic	INFLUENCE	DETER	ENABLE	RESTORE
Military				
Social				

Information Operations in Context

reducing the period of confrontation and enhancing diplomatic, economic, military, and social activities. Pre-crisis IO can forestall and possibly eliminate the need to employ physical force. In the crisis stage, IO can be a force multiplier. During combat operations, IO can help shape the battlespace and prepare the way for future combat actions to accomplish the MAGTF's objectives from a position of advantage. Once the crisis is contained, IO will help to restore peace and order, and allow the successful termination of military operations. There is no doubt that future MAGTFs will be expected to participate in the overall IO effort across the full range of military operations. IO conducted by MAGTFs will primarily consist of battlespace shaping, force enhancement, force protection actions, and any other information-oriented activity that the MAGTF can leverage to better facilitate the application of combat power.

Ultimately, the fundamental nature of war—that of continued fog and friction—remains unchanged. We will depend upon IO, in its many forms, to be a critical enabler of our timeless warfighting principles. New information technologies will allow us to build command, control, and communication systems that can maintain an overwhelming operational tempo through rapid planning and execution. It will allow us to seize the information initiative, demonstrate our resolution, and clearly explain our positive intentions to the world audience. It will enhance our ability to force future adversaries to conform to our will by reducing their ability to control information and their political and moral strengths. We will use information and influence to

deter conflict, build alliances, and enhance our total knowledge of the battlespace. When deterrence fails, we will use information to force our adversaries to fight the battle of our choosing. We must be ever mindful of our responsibilities to win in combat, while also creating an environment for lasting peace and stability.

Battlespace Shaping

The U.S. seeks to shape the international environment through a variety of means, including diplomacy, economic cooperation, international assistance, security assistance, and arms control. These efforts use power, information, and influence to achieve national objectives. In peacetime, our deployed Marine Expeditionary Units demonstrate our national resolve through forward presence, and Marines enhance regional stability through cooperative engagement with our allies in exercise, exchange, and information programs.

During crisis, MAGTF-shaping operations must be linked to U.S. strategic objectives and consistent with on-going regional engagement activities. During conflict, MAGTF-shaping operations focus on setting those conditions necessary for operational and tactical success, while supporting our Nation's objectives and policies.

We recognize that we will always be watched by the world. Our efforts will be observed, commented upon, and selectively portrayed to and by the world audience. The perceptions created by our operations will result in changes to political realities that may, in turn, affect our assigned mission. Information is a powerful component of battlespace shaping. Not only do our actions matter, but the perceptions that our actions create matter as well. Small, apparently local actions may have strategic consequences. For example, an "event" at a single checkpoint can change the relationship between the MAGTF, local residents, allied partners, and non-governmental organizations and—depending upon how the event is portrayed through the media—can dramatically sway public opinion. In the battlespace of the future, all Marines must be aware of their strategic responsibilities.

Our operations will likely involve coordinated activities with the armed forces of other nations in a multinational effort, and our future allies will have different capabilities, equipment, procedures, and values. Our operations must carefully consider the implications of actions taken by members of the multinational force. The human dimension of coalition operations must be considered to effectively form and employ the force.

We recognize that we will operate in uncertainty. All military operations, from major theater wars to the complex contingencies encountered in other expeditionary operations, will occur in an inherently uncertain and chaotic environment shaped by continuous human interaction. Civilian populations, organizations, and leaders will cause much of this uncertainty, and the commander must shape the battlespace within this context of unpredictability. Battlespace shaping helps commanders to simultaneously meet their own operational requirements and their moral and legal responsibilities to civilians.

> **The first principle is that the ultimate substance of enemy strength must be traced back to the fewest possible sources, and ideally to one alone. The attack on these sources must be compressed into the fewest possible actions – again ideally into one.**
>
> *— Clausewitz On War*

In the battlespace of the future, the integrated use of informational activities and fires, both lethal and non-lethal, is essential to achieve a common purpose. We recognize that the targeting means is secondary to achieving the desired targeting effect, especially since "targets" in IO terms will no longer reside solely in the physical domain but include the perceptions and actions of civilians, key leaders, and our military foes. Information can be used to achieve desired operational effects while mitigating unnecessary loss of life.

During conflict, the MAGTF will necessarily focus on the battlespace's physical and informational aspects that effect decisive maneuver. Since the use of information operations in battlespace shaping transcends the physical domain, MAGTFs must also consider the political, cultural and moral aspects of the battlespace. As a crisis blends into conflict, the defining point at which operations change from peace support, to peace enforcement, to conflict, will become increasingly difficult to define. It will require Marines to approach operations holistically, with an understanding of the historical underpinnings and cultural aspects of the crisis or conflict; an understanding of the ability of information and influence to achieve desired operational effects; and an understanding of their responsibilities to terminate conflict in a manner that will foster stability and goodwill.

Force Enhancement

Information has always been important in military operations. Networking and advances in computing power have allowed improved processing and display of intelligence and battlefield information. In many ways, the ability to obtain timely and accurate information has emerged as a critical aspect of command, control, strategic agility, and operational maneuver. The force that best controls, utilizes, and safeguards information and information systems has always possessed a decided military advantage; this will not change.

As a force enhancer, IO involve the integration of varied capabilities and activities into a coherent, seamless plan to achieve specific objectives. Human decision-making processes are the ultimate target. Planning guidance must be clearly established; must support overall national and military objectives; must consider the influence of other regional informational activities taking place outside the MAGTF; and must include identifiable measures of effectiveness. In addition, a close and continuous relationship between IO and intelligence support is essential.

MAGTF offensive IO activities will focus upon the operational and tactical levels of war. Actions will be oriented against command and control targets to disrupt or deny the enemy's

ability to use its own decision-making processes, information, and information systems to achieve operational objectives. A principal focus of IO at this level is the enemy commander and his decision-making process. By targeting the human element, we seek to affect the adversary's will to resist and destroy his military operational effectiveness. Integrated targeting to achieve the desired operational effects will combine influence, information, and weapon effects to shape the physical, electronic, and informational aspects of the battlespace.

The mission and the MAGTF commander's intent are paramount. All MAGTF IO elements must work together to produce a synergistic effect. During conflict, the MAGTF may rely heavily upon electronic warfare, military deception, influence operations, and physical destruction to attack command and control, intelligence, and other critical information-based processes that directly impact an adversary's ability to conduct military operations. The MAGTF may rely on national-level agencies and other Service components for certain offensive IO-related capabilities—to include computer network attack, psychological operations, and the means to manage media attention on the operation. Regardless, MAGTFs will require access to these specialized capabilities, at a minimum, if they are to be successful in the complex environment of the future.

Force Protection

The MAGTF commander will depend on information to plan operations and employ his forces. Information systems enable and enhance warfighting capabilities; however, our increased dependence upon these rapidly evolving technologies will create new vulnerabilities. Seabasing of the MAGTF makes information assurance more robust, but simultaneously more difficult to provide due to network dependence. Risk management decisions will have to be based upon the anticipated requirements and the information resources needing the most protection. The integration of protection, detection, and reaction capabilities is needed to mitigate the effects of enemy action and environmental effects. It also will enable the necessary protection of information and information systems upon which the MAGTF depends to conduct operations, and to achieve its objectives. The criticality of the MAGTF commander's access to, and use of, the information environment will not go unnoticed by future adversaries. IO will enhance force protection by protecting and defending the information and information systems that the MAGTF depends upon to conduct operations.

IO will integrate and coordinate policies and procedures, operations, personnel, and technology to protect information and defend information systems. Offensive action can be used to "pre-empt" or to respond to adversary IO capabilities. Defensive IO encompass four interrelated processes:

Information Environment Protection. The MAGTF commander will use policies, procedures, and technologies to ensure freedom of action in the information environment. Risk management principles must be applied to ensure that critical information systems are protected and available when they are most needed. Measures to ensure operational security are continuously considered.

The trade-offs between operational security, deception, public affairs, and psychological operations will be reviewed.

Attack Detection. The MAGTF must be able to rapidly detect adversary attempts to attack its information systems, and it must be able to differentiate between the effects of adversary action and other phenomena such as weather effects, normal system outages, and operator error. This will be essential to ensure effective capability restoration and attack response.

Capability Restoration. The MAGTF will require redundant, resilient information systems that can withstand the effects of enemy action, as well as environmental phenomena.

Attack Response. The MAGTF commander will respond to attacks on his information systems by active and/or passive measures. Active measures seek to degrade or destroy the adversary's attack capabilities, while passive measures attempt to mitigate the effects of adversary actions.

These activities must be conducted in parallel to ensure timely, accurate, and relevant information access, while denying adversaries the opportunity to exploit friendly information and information systems.

Support to Information Operations

Planning

Detailed, integrated planning will remain the key to successful IO. Information operations planning must be continuous, and it must be incorporated within the framework of the Marine Corps Planning Process (deliberate and crisis action). IO will be conducted in alignment with the tenets of top-down planning, the single-battle concept, and integrated planning. This will ensure unity of effort, and will result in the proper orchestration of IO within the context of the six warfighting functions (command and control, maneuver, fires, intelligence, logistic, and force protection), which serve as the building blocks of integrated planning.

Planning activities are mutually supporting and intended to produce synergistic effects. Future offensive IO, for example, will be used to support defensive IO throughout the range of military operations. The offensive and defensive uses of IO must be integrated to provide timely identification and response to potential threats to MAGTF personnel, information, and information systems.

Coordination

The future global information environment will be seamless, requiring IO to be thoroughly integrated at all levels. The MAGTF will require robust, resilient connectivity with naval, joint, and coalition forces to plan, deconflict, coordinate, and measure the operational effects of IO. Since Marine forces will likely fight as a part of a joint force, the MAGTF will rely on national-level agencies and other Service components for certain IO capabilities. Additionally, the

MAGTF will require the capability to "reach back" to the U.S. and "reach forward" to personnel or organizations already located in-theater to provide the commander with the ability to significantly increase his situational awareness.

Again, the total force must support MAGTF IO since not all IO activities that support the MAGTF will necessarily be provided by the MAGTF itself. For example, computer network monitoring support may be provided by the Marine Information Technology Network Operations Center and intelligence support may be provided by the Marine Corps Intelligence Activity. Marine Corps Reserve assets may provide civil affairs and other expertise.

Since MAGTFs will typically fight as a part of a larger joint force, their offensive, defensive, and informational IO efforts should support, and be coordinated with, the campaign plans of the geographic CINCs, joint force, and adjacent commands. The JFC may have standing IO procedures and perhaps a standing IO plan based on the CINCs' guidance for the theater of operations and the nature of the conflict. The joint force and component commanders in turn will develop their own IO plans in support of their respective objectives. These IO plans will largely reside at the operational level. The MAGTF, then, will integrate IO to support MAGTF mission requirements, while also supporting the JFC IO plan. In turn, the major subordinate commands will need to integrate the IO actions appropriate for their level of command.

The Marine Corps component commander accomplishes the assigned mission by conducting Marine Corps component operations. Where IO matters are concerned, he will advise the JFC of the IO capabilities of his forces, make recommendations on the proper employment of Marine Corps forces, request additional IO support as required, and inform the JFC regarding the Marine Corps component's IO situation and progress. With respect to IO, the Marine Corps component commander will focus upon those IO activities that will support future operations—the next Marine Corps component mission—and will coordinate IO actions with other component commanders to achieve unity of effort for the joint force. The IO orientation of the Marine Corps component commander will *normally* be at the operational level of war, while the MAGTF commander's focus will *normally* be at the tactical level. Naturally, there will be some overlap.

Intelligence Support to IO

Any new strategy must take into consideration the world's new political and demographic geography. The recognition of new and varied regional interests and an increased awareness of their antecedents will be essential. The shaping and influencing of regional attitudes through security, peace support, and informational activities will be a continuous task. We must expand intelligence support to accommodate a more finely tuned awareness of residual and emerging regional issues and critical centers of gravity. A powerful influence on intelligence will be the requirement for truly insightful political-military and cultural intelligence, which will enable the development of meaningful themes and messages within the context of influence operations. Another powerful influence will be the requirement to support both lethal and non-lethal targeting, with their respective collateral requirements for detailed analysis prior to deployment, and for effective intelligence, surveillance, and reconnaissance to support timely post-mission

assessments. Intelligence will remain fundamental, but it must become sharpened and ready to respond to the time-limited crisis action planning requirements of the future MAGTF. This means that intelligence must be forward-looking, anticipatory, and continuously analyzed when time is available prior to the contingency. It must also remain contemporary and "in-tune" with real-time and quickly evolving events.

Information operations will require broad-based intelligence support. Intelligence preparation of the battlespace (IPB) will remain a continuous process used to develop a detailed knowledge of the adversary's use of information and information systems. Intelligence support for IO planning builds upon traditional IPB, and will also require the following:

- A technical knowledge of a wide array of information, command and control, intelligence, and media systems.

- An understanding of the potential adversary's political, social, and cultural influences.

- An understanding of the adversary's decision-making process.

- An in-depth understanding of human factors, including backgrounds, motivating factors, and leadership styles of key adversary leaders and decision-makers,

Intelligence support to IO-related force protection will require adequate identification of threats to MAGTF information and information systems. Knowledge of those threats—the adversaries, their intents, and their capabilities—is a key consideration in the risk management process. In addition, counterintelligence and counterreconnaissance must directly contribute to force protection by denying critical information to potential adversaries.

Today, many IO intelligence requirements need significant lead-time to develop collection sources, access, and databases. The means to shorten these processes must be developed. Potential intelligence collection sources should be cultivated as early as possible and based upon the development of a clear and timely statement of MAGTF intelligence requirements. Information operations will require development of extensive intelligence analytical products to ensure proper and adequate knowledge of an adversary's critical cultural factors and his use of information and information systems.

Consequently, the role of intelligence in IO will be continuous. Changes in attitudes, actions, operating patterns, and enemy information systems must be detected, analyzed, and reported to ensure that IO continues to achieve the desired operational effect. Assessment of ongoing IO activities will be a crucial and extremely challenging intelligence responsibility, as targets must be monitored to determine the effectiveness of IO efforts. To achieve complete synthesis, IO must be incorporated into the MAGTF's intelligence, battle damage assessment, and targeting cycles. In many cases, the impact of IO actions will be difficult to measure, and indicators of success or failure must be carefully crafted in advance. Since IO will often not produce the same directly observable effects utilized for traditional battle damage assessment, IO execution will challenge the intelligence system to develop new methods or devise new means to measure

effectiveness. Once devised, these "indicators" should be integrated into operational planning and targeting systems.

Enhancements

Marine forces must be organized, trained, and equipped to conduct IO in support of a national or theater IO campaign and in direct support of combat operations. We recognize that, although resource restraints will remain a prime consideration, our concept for IO must be broadly adaptive to emerging warfighting concepts and changes in technology.

Competency

Recognizing that the many differing definitions and perspectives of IO will continue to evolve, we have chosen to focus upon the operationalization of IO. Information operations must be based upon the context of Marine Corps operations, our expeditionary heritage, and our concept of EMW; hence, its functions will only be adopted if they enhance the operational capability of our MAGTFs. The Marine Corps Planning Process must consider IO in greater depth.

Marines at all levels need to understand the warfighting implications of new information technologies and the global information environment of the future. Awareness and training will heighten our understanding of the threat, and underscore the importance of adhering to protective measures. Despite the advents of technology, Marine forces must still remain capable of operating effectively even when their information systems fail. Finally, the Marine Corps professional military education system must prepare leaders at all levels to conduct integrated expeditionary planning, and prepare them for the informational demands of future conflict.

> **IO Requirements**
>
> - **Educated Leaders**
> - **Realistic, Challenging Training**
> - **Intelligence Support**
> - **Integrated Planning Process**
> - **Secure, Reliable Information Systems**
> - **Reachback Support Capability**

Development and Experimentation

We recognize that manning levels will remain austere. Expeditionary Maneuver Warfare will drive changes in the way the Marine Corps organizes for combat. Future changes in technology and the information environment will lead to experimentation with new organizational structures, which will seek to maintain our strengths as a combined arms force while incorporating the benefits of integrated IO.

Expeditionary Maneuver Warfare will also drive changes in the way the Marine Corps equips for combat. The demands of force protection will require that MAGTF information systems be developed that are resilient enough to meet the MAGTF commander's requirements while under stress from both adversary action,and the expeditionary environments in which we operate.

Support

Forward-deployed MAGTFs will increasingly rely upon non-theater, even CONUS-based facilities for a wide variety of support functions, to include intelligence, planning, coordination, and overall database support to MAGTF IO efforts. The effectiveness of this support, or "reach-back" capability, will be dependent upon secure and reliable communications connectivity, which again must be resilient enough to function while under stress from adversary action and harsh environments. The complexity of operations in the information age will tax the ability of the MAGTF staff to effectively handle all required tasks in a timely manner, and reachback will provide the MAGTF commander with the capabilities he requires—IO and otherwise—to accomplish assigned missions.

Conclusion

The use of information in warfare is not new, as commanders since Sun Tzu have long recognized the importance of information in influencing the outcome of battle. Today, the information revolution continues, having been created through the dynamic confluence of knowledge, communications systems, technology, and a changing world environment. Despite the advances in capability it will offer, the information revolution will not supplant timeless military thought. At its most fundamental level, war will remain a classic struggle between two opposing wills, but will be increasingly complex due to the nature of the future world environment, and the wealth of information available to support it. Even as we strive to adequately consider the informational, political, cultural, and moral factors that will shape future conflict, we still recognize that the fog and friction of warfare will never be completely eliminated. In response, the Marine Corps will continue to search for, and experiment with, new ways to reduce uncertainty to acceptable levels without succumbing to the hidden perils of the information technology realm. Further, IO will undoubtedly adapt as new technologies arise, but we shall remain mindful that our main objective is operational success, not the attainment of information or technology for its own sake. In

keeping with this focus, IO pursued by Marines will provide us with the means to use and manipulate information and information technology to our best operational advantage, while also reducing or eliminating an adversary's ability to do the same.

Looking to the future, the Marine Corps will continue to build upon its expeditionary heritage and maneuver warfare philosophy through implementation of our EMW concept. IO will complement our pursuit of EMW aims by enhancing operational maneuver and force protection, expanding knowledge and understanding of the environment and its cultures, and providing the means to extend the influence of the MAGTF well beyond the range of its weapons systems. Used judiciously, IO will create critical opportunities that will allow future Marine Forces to project combat power more effectively and efficiently in support of MAGTF commander, JFC and CINC objectives. Most importantly, IO will serve as a key complement to the traditional capabilities of the MAGTF, thereby enabling us to continue providing the Nation with a "total force" crisis deterrence and response capability that is precisely tailored to meet the challenges of the 21st century.