

Joint Publication 2-01.3



Joint Intelligence Preparation of the Operational Environment



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PREFACE

1. Scope

This publication provides doctrine for conducting joint intelligence preparation of the operational environment (OE) across the range of military operations. It describes the process to analyze the adversary and other relevant aspects of the OE in order to identify possible courses of action and to support joint operation planning, execution, and assessment.

2. Purpose

This publication has been prepared under the direction of the Chairman of the Joint Chiefs of Staff (CJCS). It sets forth joint doctrine to govern the activities and performance of the Armed Forces of the United States in joint operations and provides the doctrinal basis for interagency coordination and for US military involvement in multinational operations. It provides military guidance for the exercise of authority by combatant commanders and other joint force commanders (JFCs) and prescribes joint doctrine for operations, education, and training. It provides military guidance for use by the Armed Forces in preparing their appropriate plans. It is not the intent of this publication to restrict the authority of the JFC from organizing the force and executing the mission in a manner the JFC deems most appropriate to ensure unity of effort in the accomplishment of the overall objective.

3. Application

- a. Joint doctrine established in this publication applies to the joint staff, commanders of combatant commands, subunified commands, joint task forces, subordinate components of these commands, the Services, and combat support agencies.
- b. The guidance in this publication is authoritative; as such, this doctrine will be followed except when, in the judgment of the commander, exceptional circumstances dictate otherwise. If conflicts arise between the contents of this publication and the contents of Service publications, this publication will take precedence unless the CJCS, normally in coordination with the other members of the Joint Chiefs of Staff, has provided more current and specific guidance. Commanders of forces operating as part of a multinational (alliance or coalition) military command should follow multinational

doctrine and procedures ratified by the United States. For doctrine and procedures not ratified by the United States, commanders should evaluate and follow the multinational command's doctrine and procedures, where applicable and consistent with US law, regulations, and doctrine.

For the Chairman of the Joint Chiefs of Staff:



DAVID L. GOLDFEIN, Lt Gen, USAF
Director, Joint Staff

**SUMMARY OF CHANGES
REVISION OF JOINT PUBLICATION 2-01.3
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- Explains the reallocation of responsibility for the coordination and tasking of intelligence production support for current and planned joint operations to the Joint Staff Directorate for Intelligence and the Defense Intelligence Agency due to the disestablishment of the Defense Intelligence Operations Coordination Center.
- Describes the roles and contributions of the National Geospatial-Intelligence Agency, National Security Agency/Central Security Service, Defense Threat Reduction Agency, and the Joint Improvised Explosive Device Defeat Organization, to the joint intelligence preparation of the operational environment (JIPOE) process.
- Provides a more holistic description of the main focus of the JIPOE.
- Establishes separate chapters for discussing each of the four steps in the JIPOE process.
- Explains the intelligence implications for the growing recognition of the importance of “other relevant actors” to joint operations, to include a new appendix with an Operation IRAQI FREEDOM case study.
- More clearly explains the JIPOE functions of a combatant command joint intelligence operations center.
- Identifies additional members for a notional joint force “JIPOE coordination cell.”
- Clarifies the roles and responsibilities between a “red cell” and the “combatant command red team” within the JIPOE process.
- Expands the discussion of cyberspace considerations.
- Provides a new discussion of identity intelligence products and sociocultural analysis contributions to JIPOE.
- Describes the capabilities and contributions of weapons technical intelligence to the intelligence directorate of a joint staff planning and JIPOE.
- Modifies the joint definitions of “exploitation,” “military geography,” and “named area of interest.”

Summary of Changes

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EXECUTIVE SUMMARY COMMANDER'S OVERVIEW

- Provides an overview of joint intelligence preparation of the operational environment (JIPOE) assessments, estimates, and other intelligence products.
 - Explains how JIPOE defines the operational environment (OE) by identifying aspects and significant characteristics that may be relevant to the joint force's mission.
 - Describes how a systems perspective is developed to analyze the impact of the OE on adversary, friendly, and neutral military capabilities.
 - Describes how the JIPOE process identifies and evaluates adversary capabilities and limitations, current situation, center of gravity, and adversary forces' doctrine, patterns of operation, and tactics, techniques, and procedures.
 - Explains how the JIPOE process develops a detailed understanding of adversary and other relevant actors' probable intent and future strategy.
 - Describes JIPOE support to joint operation planning, execution, and assessment
 - Outlines JIPOE support during irregular warfare, particularly to counter asymmetric approaches.
 - Provides an overview of the parameters under which Department of Defense intelligence components operate when supporting domestic operations.
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An Overview of Joint Intelligence Preparation of the Operational Environment

The Operational Environment (OE)—A Holistic View

The operational environment (OE) is a composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander. The joint intelligence preparation of the operational environment (JIPOE) process is used to analyze all relevant aspects of this environment, including the adversary and other actors; the physical domains (air, land, maritime, and space); the information environment (which includes cyberspace);

and political, military, economic, social, information, and infrastructure (PMESII) systems and subsystems.

A holistic understanding of all relevant components within the OE helps the joint force commander (JFC) to know how the OE constrains or shapes options, how the OE affects capabilities, and how friendly, adversary, and neutral actors' actions affect or shape the conflict. Of greatest significance, understanding relevant aspects of the OE enables the JFC to leverage aspects of the OE to achieve the objectives and attain the desired end states of the operation.

The JIPOE process provides a disciplined methodology for applying a holistic view of the OE to the analysis of adversary capabilities and intentions. This process consists of four basic steps: define the operational environment, describe the impact of the operational environment, evaluate the adversary and other relevant actors, and determine adversary and other relevant actor courses of action (COAs). These four steps ensure the systematic analysis of all relevant aspects of the OE. The process is both continuous and cyclical in that JIPOE is conducted both prior to and during a joint operation as well as during planning for follow-on missions. The most current information available regarding the adversary situation and the OE is continuously integrated throughout the JIPOE process. Although some aspects of the JIPOE process may require adjustment depending on the type of mission, the basic process remains the same throughout the range of military operations.

Define the Operational Environment—Step 1

In the first step of the JIPOE process, the joint force staff assists the JFC and component commanders in defining the OE by:

1. Identifying the joint force's operational area.
2. Analyzing the mission and JFC's intent.
3. Determining the significant characteristics of the operational environment.

4. Identifying the limits of the joint force's areas of interest.
5. Determining the level of detail required and feasible within the time available.
6. Determining intelligence and information priorities, gaps, and shortfalls.
7. Collecting material and submit requests for information to support further analysis.

Successfully defining the command's OE is critical to the outcome of the JIPOE process. The succeeding steps of the JIPOE process must concentrate on those aspects and characteristics of the OE that could influence the accomplishment of the joint force's mission. Correctly defining the relevant aspects of the OE saves time and effort by focusing the work of the joint force staff on only those characteristics that could influence the JFC's decisions and the selection of friendly COAs.

Describe the Impact of the Operational Environment—Step 2

Develop a Geospatial Perspective of the OE

The second step in the JIPOE process evaluates and describes broad COAs and the impact of the OE on adversary, friendly, and neutral military capabilities. All relevant physical and nonphysical aspects of the OE are analyzed by JIPOE analysts, combatant commander (CCMD) personnel, and geospatial intelligence analysts to produce a geospatial perspective. Likewise, a systems perspective is developed through the analysis of relevant sociocultural factors and system nodes and links. Products developed during this step might include overlays, diagrams, and matrices that depict the military impact of geography, network analysis, meteorological and oceanographic factors, demographics, and the information environment. Other products include assessments of sociocultural factors and network analysis diagrams associated with adversary and neutral PMESII and other systems.

Develop a Systems Perspective of the OE

An understanding of the OE's systems and their relationships and interdependencies can help JFCs and their staffs visualize and describe how military actions can affect other agency and multinational partners as

well as how those partners' actions can affect the JFC's operations. Visualizing and describing the interaction of PMESII systems and subsystems can facilitate the JFC's collaboration with counterparts from other agencies and organizations and help influence actions that are beyond the JFC's direct authority. The development of a systems perspective of the OE typically will require cross-functional participation by other joint force staff elements and collaboration with various intelligence organizations, other US government departments and agencies, and nongovernmental centers of excellence.

Describe the Impact of the OE on Adversary and Friendly Capabilities

The evaluations of all the individual aspects of the OE and the systems perspective are ultimately combined into a single integrated assessment that focuses on the overall impact of the OE on all joint COAs available to both friendly and adversary forces. This product is designed to support the development and evaluation of friendly joint COAs by providing an evaluated and prioritized set of land, sea, and air avenues of approach, potential engagement areas, key terrain and maritime geography, key nodes and links, and an analysis identifying periods of optimal weather conditions for specific types of military operations.

The final result of step two of the JIPOE process is a preliminary prioritization of adversary COAs based on how well each is supported by the overall impact of the OE.

Evaluate the Adversary and other Relevant Actors—Step 3

The third step in the JIPOE process identifies and evaluates the adversary's capabilities and limitations, current situation, centers of gravity (COGs), and the doctrine, patterns of operation, and tactics, techniques, and procedures employed by adversary forces, absent those constraints identified during step two.

Adversary capabilities are identified in terms of broad COAs and supporting operations that the adversary can take that may influence the accomplishment of the friendly mission. Failure to accurately evaluate the adversary may cause the command to be surprised by an unexpected adversary capability, or result in the

unnecessary expenditure of limited resources against adversary force capabilities that do not exist.

In addition to the adversary, it is important to understand other relevant actors that may positively or negatively impact the friendly mission.

By first understanding who the relevant actors are and learning as much as possible about them and the relationships between them, the JFC can develop an approach that will facilitate decision making and behavior (active or passive) among relevant actors that is consistent with the desired end state of the operation.

Determine Adversary and other Relevant Actor Courses of Action—Step 4

The first three steps of the JIPOE process help to provide JFCs, subordinate commanders, and their staffs with a holistic view of the OE by analyzing the impact of the OE, assessing adversary doctrine and capabilities, and identifying adversary COGs and decisive points. The fourth step of the JIPOE process builds upon this holistic view to develop a detailed understanding of the adversary's and other relevant actors' probable intent and future strategy.

The likely objectives and desired end state of the adversary and other relevant actors are identified by analyzing the current military and political situation, strategic and operational capabilities, and the sociocultural characteristics of the adversary and other actors.

A consolidated list of all potential adversary COAs is constructed. At a minimum this list will include all COAs that the adversary's doctrine or pattern of operations indicates are appropriate to the current situation and accomplishment of likely objectives; all adversary COAs that could significantly influence the friendly mission, even if the adversary's doctrine or pattern of operations indicates they are suboptimal under current conditions; and all adversary COAs indicated by recent activities or events.

The full set of identified adversary COAs is evaluated and ranked according to the likely order of adoption. The purpose of the prioritized list of adversary COAs is

to provide JFCs and their staffs with a starting point for the development of a plan or order that takes into consideration the most likely adversary COA as well as the adversary COA most dangerous to the friendly force or mission accomplishment.

Subject to the amount of time available for analysis, each adversary COA is developed in sufficient detail to describe: the type of military operation; the earliest time military action could commence; the location of the action, and the objectives that make up the COA; the operational plan to include scheme of maneuver and force dispositions; and the objective or desired end state. Each COA should be developed in the order of its probability of adoption, and should consist of a situation template, a description of the COA, and a listing of high value targets.

The identification of initial intelligence collection requirements depends on the prediction of specific activities and the areas in which they are expected to occur which, when observed, will reveal which COA the adversary has adopted. The areas in which these activities or indicators are expected to take place are designated as named area of interest.

Support to Joint Operation Planning, Execution, and Assessment

Planning

JIPOE supports joint operation planning by identifying significant facts and assumptions about the operational environment. This information includes details regarding adversary critical vulnerabilities, capabilities, decisive points, limitations, COGs, and potential COAs. JIPOE products are used by the JFC to produce the commander's estimate of the situation and concept of operations, and by the joint force staff to produce their respective staff estimates.

The JIPOE effort should facilitate parallel planning by all strategic, operational, and tactical units involved in the operation. JIPOE products developed to support strategic-level planning should also be simultaneously disseminated to all appropriate operational and tactical headquarters.

Execution

During execution, the JIPOE effort must stay at least one step ahead of operations by simultaneously

supporting the current phase of the operation and laying the informational groundwork required for subsequent phases. JIPOE analysts must continuously evaluate how the execution of each operation phase may require the modification of preplanned intelligence collection and production requirements and counter intelligence activities. Optimizing the use of limited intelligence, surveillance, and reconnaissance assets and maximizing the efficiency of intelligence production resources requires constant anticipation of operational change by JIPOE planners.

Assessment

Assessment actions and measures help commanders adjust operations and resources as required, determine when to execute branches and sequels, and make other critical decisions to ensure current and future operations remain aligned with the mission and desired end state.

The JIPOE process supports assessment by helping the commander and staff decides what aspects of the OE to measure and how to measure them to determine progress toward accomplishing tasks, and setting conditions necessary to achieve an objective.

JIPOE analysts support assessment by analyzing adversary capabilities, vulnerabilities, and intentions, and by continuously monitoring the numerous aspects of the OE that can indicate the effectiveness of friendly operations.

JIPOE analysts provide objective assessments that gauge the overall impact of military operations against adversary forces and estimate likely adversary reactions and counteractions. JIPOE products, supplemented by the use of the CCMD red team to critically examine the measure of effectiveness from the adversary's perspective, help ensure the JFC is measuring the "important things".

Special Considerations

Some types of missions, operations, and situations may require a more tailored JIPOE approach that places greater emphasis on specific aspects of the operational environment. For example, stability operations, counterterrorism, counterinsurgency, and unconventional warfare require an approach that places

far greater emphasis on understanding the civil population and critical infrastructure. Likewise, the contribution of the JIPOE effort to countering asymmetric approaches requires techniques and products that are specifically tailored to the types of joint operations capable of defending against and defeating asymmetric threats.

JIPOE support during stability operations and irregular warfare requires a more detailed understanding of the relevant area's sociocultural factors than during traditional war. Sociocultural analysis improves the JFC's ability to understand, predict, respond to and/or influence the decision making and associated behavior of relevant actors. JFCs, subordinate commanders, and their staffs must understand the cultural landscape in which they operate in order to make sound decisions concerning force protection and the deployment of forces. JIPOE products must describe the impact of ethnic groups and religions, to include their associated leadership, the locations of places of worship and cultural/historical significance, languages being spoken, population density, age, living conditions, allocation of wealth, and means of income.

Support to Domestic Operations

The parameters under which Department of Defense (DOD) intelligence components operate are different when operating within the US territorial jurisdiction than they are overseas. Use of DOD intelligence component capabilities within the US territorial jurisdiction receives heightened scrutiny by the public, media, and higher headquarters.

Accordingly, any anticipated use of DOD intelligence component capabilities for JIPOE within the US territorial jurisdiction of US Northern Command or US Pacific Command should be closely coordinated with the servicing staff judge advocate office to ensure that the contemplated use will be in accordance with law and policy.

CONCLUSION

This publication provides doctrine for conducting JIPOE across the range of military operations.

CHAPTER I

AN OVERVIEW OF JOINT INTELLIGENCE PREPARATION OF THE OPERATIONAL ENVIRONMENT

“Nothing is more worthy of the attention of a good general than the endeavor to penetrate the designs of the enemy.”

Niccolo Machiavelli
Discourses, 1517

1. Introduction

a. Joint intelligence preparation of the operational environment (JIPOE) is the analytical process joint intelligence organizations use to produce intelligence assessments, estimates, and other intelligence products in support of the joint force commander's (JFC's) decision-making process. Throughout the document the term adversary may imply other relevant actors based on the threat or impact the relevant actors may have on joint operations. JIPOE is a continuous process that involves four major steps:

- (1) Define the operational environment (OE).
- (2) Describe the impact of the OE.
- (3) Evaluate the adversary and other relevant actors.
- (4) Determine the course of action (COA) for adversary and other relevant actors, particularly the most likely COA and the COA most dangerous to friendly forces and mission accomplishment.

b. The OE is a composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander. The JIPOE process is used to analyze all relevant aspects of this environment, including the adversary and other actors; the physical domains (air, land, maritime, and space); the information environment (which includes cyberspace); and political, military, economic, social, information, and infrastructure (PMESII) systems and subsystems. Joint force, component, and supporting command staffs use JIPOE products to prepare their estimates and to analyze and select friendly COAs. Because the intelligence directorate of a joint staff (J-2) leads the effort to understand this environment, the J-2 is a key participant in operational design that begins early during mission analysis and drives the rest of the joint operation planning process (JOPP).

c. JIPOE's main focus is to provide predictive intelligence designed to help the JFC discern the adversary's probable intent and most likely future COA. The JIPOE process identifies adversary and other relevant actor centers of gravity (COGs) and determines their capabilities to operate within the OE. JIPOE also helps the JFC gain information

superiority by providing timely intelligence, focusing intelligence collection at the right time and place, and analyzing the evolving OE. By enhancing the JFC's understanding of relevant aspects of the OE, JIPOE improves the JFC's ability to understand, anticipate, and/or influence the decision making and associated behavior of relevant actors in a manner consistent with operational objectives. A holistic understanding of all relevant components within the OE helps the JFC to know how the OE constrains or shapes options, how the OE affects capabilities, and how friendly, adversary, and neutral actors' actions affect or shape the conflict. Of greatest significance, understanding relevant aspects of the OE enables the JFC to leverage aspects of the OE to achieve the objectives and attain the desired end states of the operation.

d. J-2s at all levels manage the JIPOE effort to support joint operation planning, enable commanders and other key personnel to visualize the full range of relevant aspects of the OE, identify adversary COGs, conduct assessment of enemy actions, and evaluate potential adversary COAs. The JIPOE effort needs to be coordinated, synchronized, and integrated with the separate intelligence preparation of the battlespace (IPB) efforts of the component commands and Service intelligence centers. Additionally, JIPOE relies heavily on inputs from several related, specialized efforts, such as geospatial intelligence (GEOINT) preparation of the environment (GPE) and medical intelligence preparation of the operational environment (MIPOE). All staff elements of the joint force and component commands, to include non-intelligence entities from the joint force and participating United States Government (USG) departments and agencies such as the Department of State (DOS) and the United States Agency for International Development (USAID), fully participate in the JIPOE effort by providing information and data relative to their staff areas of expertise. However, JFCs and their subordinate commanders are the key players who plan and guide the intelligence effort, and JIPOE plays a critical role in maximizing efficient intelligence operations, determining an acceptable COA, and developing a concept of operations (CONOPS). Therefore, commanders should integrate the JIPOE process and products into the joint force's planning, execution, and assessment efforts.

Refer to Joint Publication (JP) 2-0, Joint Intelligence, and JP 2-01, Joint and National Intelligence Support to Military Operations, for specific procedures on requesting collection, exploitation, or production to support JIPOE. For further information regarding GEOINT, GPE, and MIPOE in joint operations, refer respectively to JP 2-03, Geospatial Intelligence in Joint Operations, and JP 4-02, Health Services.

2. The Operational Environment—A Holistic View

Understanding the OE requires a holistic view that encompasses the physical areas and factors (of the air, land, maritime, and space domains) and the information environment (which includes cyberspace). Included within these are the adversary, friendly, and neutral PMESII systems, subsystems, objects, and affiliated attributes, and their relationships and interdependencies that are relevant to a specific joint operation. Understanding the OE is fundamental to identifying the conditions required to achieve stated objectives; avoiding the effects that may hinder mission accomplishment (undesired effects); and assessing the impact of friendly, adversary, and other relevant

actors, such as the local populace, on the commander's CONOPS and progress toward attaining the military end state. Figure I-1 graphically conceptualizes a holistic view of the OE.

a. **Physical Areas and Factors.** The physical areas include the assigned operational area and the associated areas of influence and interest necessary to conduct operations within the air, land, maritime, and space domains and the information environment. The OE includes numerous factors the JFC and staff must consider such as terrain, topography, hydrology, hydrography, meteorology, oceanography, and space, surface, and subsurface environmental conditions (natural or man-made); distances associated with the deployment and employment of forces and other joint capabilities; the location of bases, ports, and other supporting infrastructure; and friendly, adversary, neutral, and other combatant, or hostile, forces and capabilities. Combinations of these factors greatly affect the operational design and sustainment of joint operations.

b. **Information Environment.** The information environment is the aggregate of individuals, organizations, and systems that collect, process, disseminate, or act on information. It is made up of three interrelated dimensions: physical, informational, and cognitive. A significant component of the information environment is cyberspace, which overlaps the physical and informational dimensions of the information environment. It is

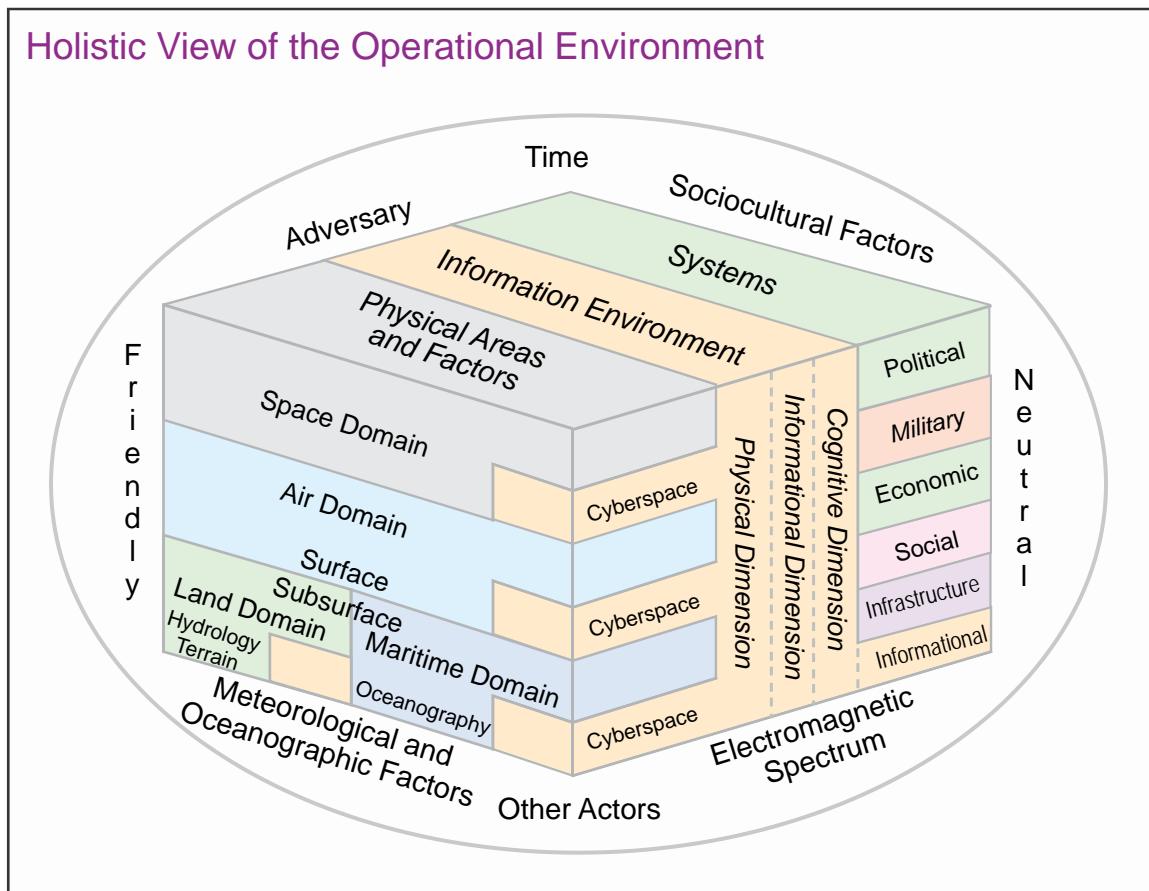


Figure I-1. Holistic View of the Operational Environment

critical that JIPOE analysis of the information environment include support to cyberspace operations (CO) and the identification of key individuals and groups having influence over the indigenous population as well as the source of their influence (e.g., social, financial, religious, political).

For more information on the information environment, refer to JP 3-13, Information Operations. For more information on CO, refer to JP 3-12, Cyberspace Operations.

c. Systems Perspective. A systems perspective of the OE usually provides an understanding of significant relationships and interdependencies within and between interrelated PMESII and other systems relevant to a specific joint operation and considering the commander's specified focus area. This focus area usually will be based on an impending or potential contingency or on other factors of interest to the JFC. Specifically, intelligence will identify key functions within the OE and derive an understanding of those functions using a systems perspective. This will enable understanding of the conditions within the OE that directly impact current functionality advantageous for friendly, adversary, or other decision makers and their decision-making processes. Among other benefits, this perspective helps intelligence analysts identify potential sources from which to gain indications and warning, and facilitates understanding the continuous and complex interaction of friendly, adversary, and neutral systems. Although this description of the OE is not itself an element of operational design, it supports most operational design elements. For example, this perspective helps analysts with COG analysis and planners with operational design by identifying nodes in each system, the links (relationships) between the nodes, critical factors, and potential decisive points. This understanding facilitates the identification and use of decisive points, lines of operation, and other operational design elements, and allows commanders and staffs to consider a broader set of options to focus limited resources, create desired effects, and achieve objectives. See Chapter III, "Describe the Impact of the Operational Environment—Step 2," for more information on the development of a systems perspective as part of the JIPOE process.

d. Other Factors. Some factors exert direct or indirect influence throughout all aspects of the OE. These other factors help compose a holistic view of the OE and include blue force status and location, meteorological and oceanographic (METOC) and climatology effects, sociocultural factors, and time as it relates to an adversary's ability to decide and react. In some types of operations, such as foreign humanitarian assistance, counterinsurgency, and nation assistance, some of these factors reach critical importance. Overlaying these factors is the mindset of the adversary and other relevant actors. This mindset incorporates the ambitions of key personalities, national/ethnic/sectarian aspirations, historical grievances, cultural or emotional reactions to recent events and changing conditions, the effects of information manipulation, and similar intangible motivators. A combatant command (CCMD) red team, if established, is a valuable resource in assessing the adversary mindset and estimating its impacts on the OE.

3. Differences Between Joint Intelligence Preparation of the Operational Environment and Intelligence Preparation of the Battlespace

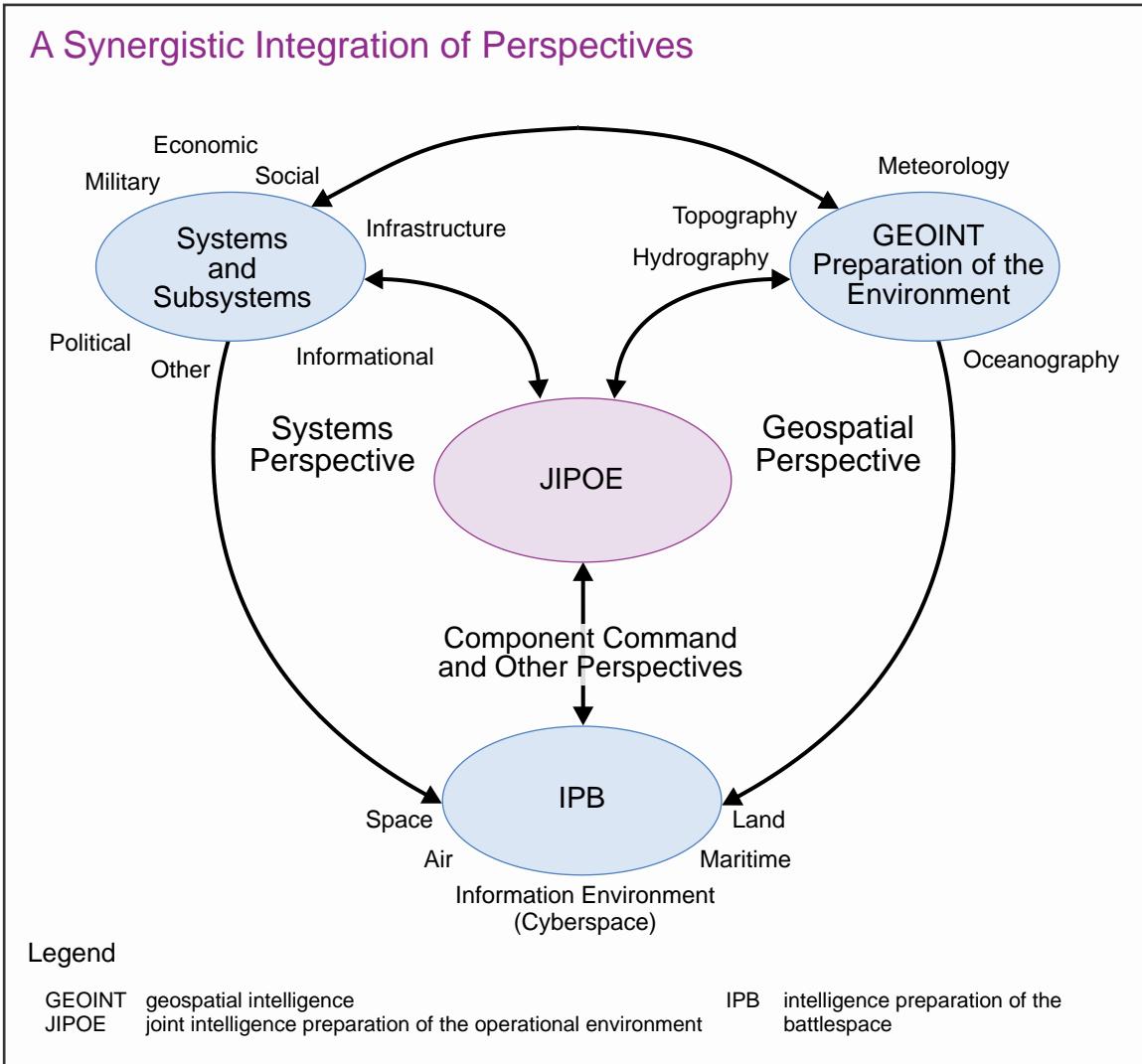
a. JIPOE and IPB products generally differ in purpose, focus, and level of detail. The purpose of JIPOE is to support the JFC by determining the probable intent and most likely COA for the adversary and other relevant actors throughout the OE, whereas IPB is specifically designed to support the individual operations of the component commands. During operational-level, force-on-force confrontations, JIPOE utilizes a macro-analytic approach that identifies an adversary's strategic vulnerabilities and COGs, whereas IPB generally requires micro-analysis and a finer degree of detail in order to support component command operations. However, in some situations (especially during military engagement, security cooperation, and deterrence operations, or crisis response and limited contingency operations), both JIPOE and IPB will require the highest possible level of detail. JIPOE and IPB analyses support each other while avoiding a duplication of analytic effort.

b. Furthermore, the JIPOE process emphasizes a more *holistic* approach than IPB by analyzing and integrating a systems perspective and geospatial perspective along with the force-specific IPB perspectives of the component commands, multinational partners, or other organizations (see Figure I-2). This holistic approach creates an analytic synergy that helps JIPOE analysts assess the adversary's diplomatic, informational, military, and economic options, as well as the impacts and effects of all relevant actors on threat and friendly operations. The JIPOE process also provides a methodology for refining the assessment of the adversary's military option and for hypothesizing the adversary's most likely and most dangerous COAs. Once the JIPOE analyst has identified a likely military COA, the same analytic techniques can be used to identify the adversary's most likely CONOPS.

4. Joint Intelligence Preparation of the Operational Environment and the Joint Intelligence Process

JIPOE is a dynamic process that both supports and is supported by each of the categories of intelligence operations that comprise the intelligence process (see Figure I-3).

a. **JIPOE and Intelligence Planning and Direction.** The JIPOE process provides the basic data and assumptions regarding the adversary and other relevant aspects of the OE that help the JFC and staff identify intelligence requirements, information requirements, and collection requirements. By identifying known adversary capabilities and applying those against the impact of the OE, JIPOE provides the conceptual basis for the JFC to visualize and understand relevant aspects of the OE. It also depicts how the adversary and other relevant actors might threaten the joint force or interfere with mission accomplishment. This analysis forms the basis for developing the commander's priority intelligence requirements (PIRs), those questions the JFC considers vital to the accomplishment of the assigned mission. Additionally, by identifying specific adversary COAs and COGs, JIPOE provides the basis for wargaming in which the staff "fights" each friendly and adversary COA. This wargaming process identifies decisions the JFC

**Figure I-2. A Synergistic Integration of Perspectives**

must make during execution and allows the J-2 to develop specific intelligence requirements to facilitate those decisions. JIPOE also identifies critical information gaps regarding the OE in order to synchronize and prioritize collection needs and resources.

See JP 2-0, Joint Intelligence, for a more in-depth discussion of the relationship between intelligence requirements and information requirements. See JP 2-01, Joint and National Intelligence Support to Military Operations, for detailed discussion of PIRs.

b. JIPOE and Intelligence Collection. JIPOE supports development of an optimal intelligence collection strategy by enabling analysts to identify the time, location, and type of anticipated activity corresponding to each potential adversary or other relevant actor COA. JIPOE products include several tools that facilitate the refinement of information requirements into specific collection requirements. For example, JIPOE templates facilitate the analysis of all identified adversary COAs and identify named areas of interest (NAIs) where specified adversary activity, associated with each COA,

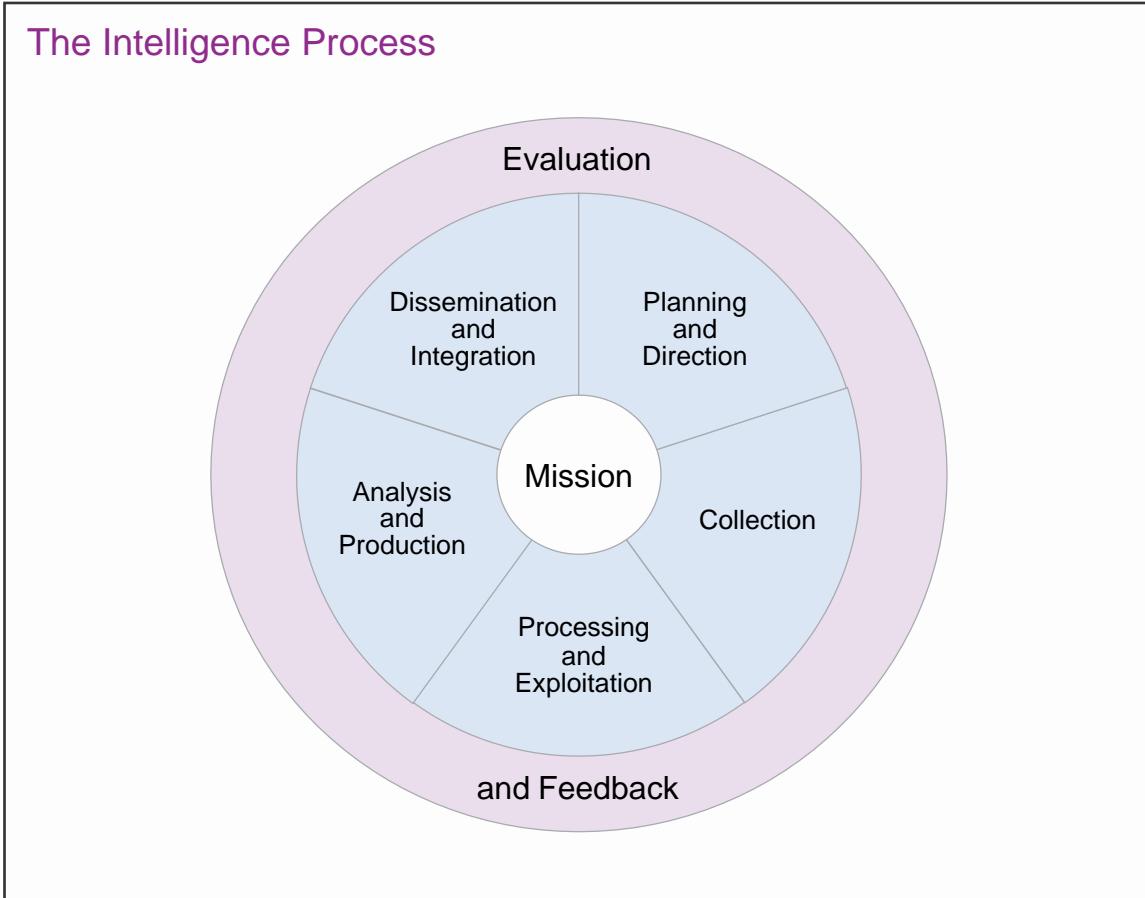


Figure I-3. The Intelligence Process

may occur. JIPOE matrices are also produced that describe the indicators associated with each specified adversary activity. In addition to specifying the anticipated locations and type of adversary activity, JIPOE templates and matrices also forecast the times when such activity may occur, and can therefore facilitate the sequencing of intelligence collection requirements and the identification of the most effective methods of intelligence collection.

c. **JIPOE and Processing and Exploitation.** The JIPOE process provides a disciplined yet dynamic time-phased methodology for optimizing the processing and exploiting of large amounts of data. The process enables JIPOE analysts to remain focused on the most critical aspects of the OE, especially the adversary. Incoming information and reports can be rapidly incorporated into existing JIPOE graphics, templates, and matrices. In this way, JIPOE products not only serve as excellent processing tools, but also provide a convenient medium for displaying the most up-to-date information, identifying critical information gaps, and supporting operational and campaign assessments.

d. **JIPOE and Analysis and Production.** JIPOE products provide the foundation for the J-2's intelligence estimate. In fact, the JIPOE process parallels the paragraph sequence of the intelligence estimate format (see Figure I-4). As shown in Figure I-4, the

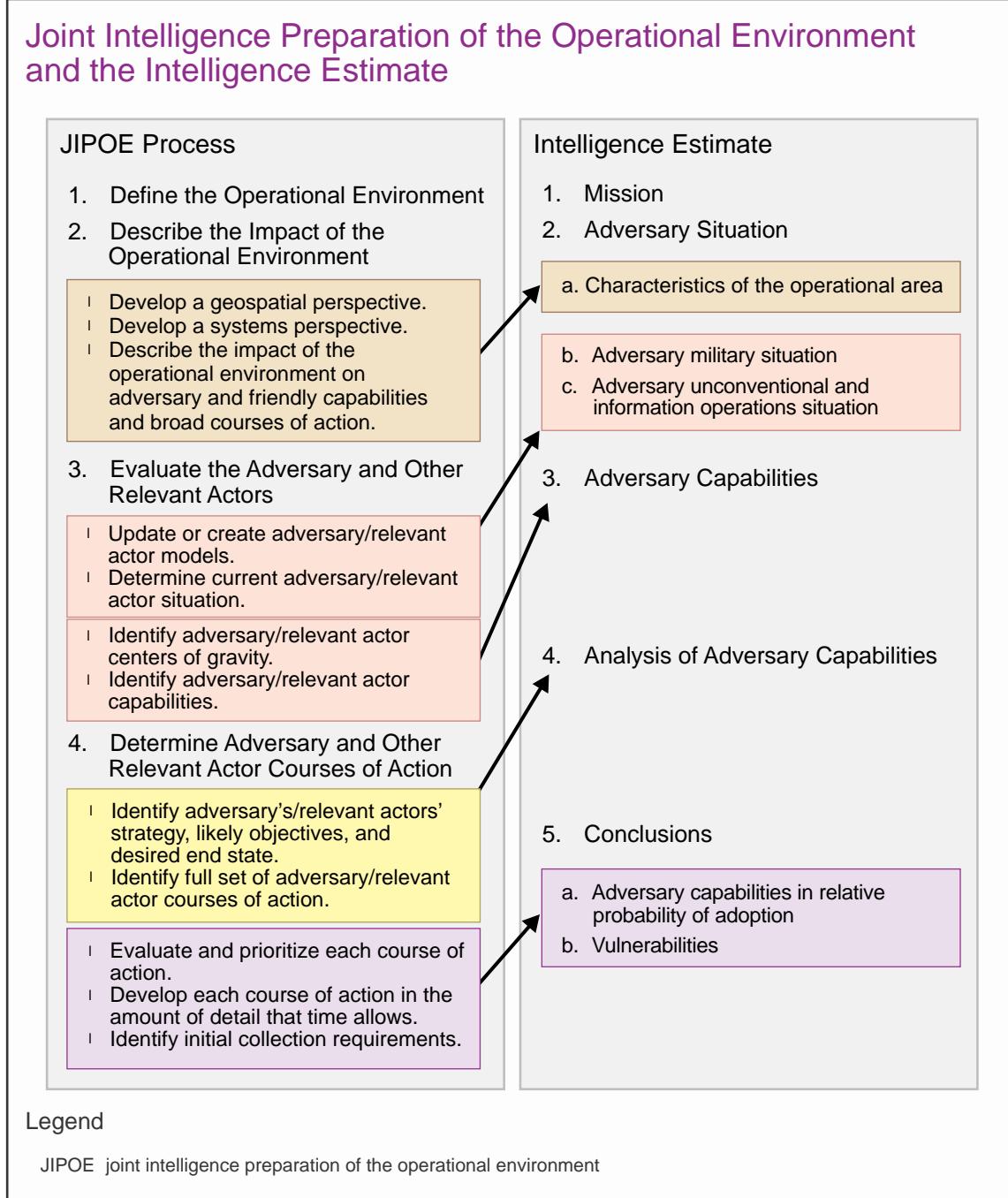


Figure I-4. Joint Intelligence Preparation of the Operational Environment and the Intelligence Estimate

intelligence estimate, paragraph 2.a., “Characteristics of the operational area,” is specifically derived from the second step of the JIPOE process, which describes the impact of the OE on friendly and adversary operations. The third step of the JIPOE process, an evaluation of the adversary and other relevant actors, provides the data for the intelligence estimate’s paragraphs 2.b, “Adversary military situation,” 2.c. “Adversary unconventional and information operations situation,” and 3, “Adversary Capabilities.”

Likewise, the analysis of adversary COAs, prepared during the fourth JIPOE step, is used in paragraphs 4, “Analysis of Adversary Capabilities,” and 5, “Conclusions,” of the intelligence estimate.

e. JIPOE and Dissemination and Integration. The J-2’s intelligence estimate provides vital information that is required by the joint force staff to complete their estimates, and for subordinate commanders to continue concurrent planning activities. Timely dissemination of the intelligence estimate is therefore paramount to good operation planning. If time does not permit the preparation and dissemination of a written intelligence estimate, JIPOE templates, matrices, graphics, and other data sources should be disseminated to joint force staff sections and component and supporting commands to effectively integrate them into operation planning.

f. JIPOE and Evaluation and Feedback. Consistent with the intelligence process, the J-2 staff continuously evaluates and updates JIPOE products to ensure that they achieve and maintain the highest possible standards of intelligence excellence as discussed in JP 2-0, *Joint Intelligence*. These standards require that intelligence products anticipate the needs of the JFC and are timely, accurate, usable, complete, objective, and relevant. If JIPOE products fail to meet these standards, the J-2 should take corrective action. The failure of the J-2 staff to achieve and maintain intelligence product excellence may contribute to the joint force’s failing to accomplish its mission.

5. Organizations, Roles, and Responsibilities

a. Services. The Services train Service intelligence (including medical intelligence), METOC, and geospatial information and services (GI&S) personnel in IPB techniques appropriate to their Service and mission; equip their forces with the materiel needed to conduct IPB during tactical operations; and produce and disseminate IPB products derived from specific databases located at the Service intelligence centers.

b. Department of Defense (DOD) Organizations

(1) **The Defense Intelligence Agency (DIA).** The Joint Staff (JS) J-2 [Directorate for Intelligence], in coordination with DIA, is the focal point for tasking the production of baseline strategic intelligence analysis in support of current and planned joint operations. DIA, through the JS J-2, provides direction and deconfliction for JIPOE intelligence production support by Service intelligence centers. DIA also supports the JS J-2 in facilitating a combatant commander’s (CCDR’s) request for federated intelligence support in response to both deliberate and crisis action planning. Through the JS J-2, DIA receives and validates all requests for information (RFIs) and collection requirements submitted by the CCMDs and tasks national-level organizations for collection or production in response to intelligence requirements. Additionally, through the JS J-2, DIA initiates and produces all-source, finished intelligence production in support of the JFC’s JIPOE processes consistent with its Defense Intelligence Analysis Program responsibilities and JFC requests.

For more detailed guidance on RFIs and DIA support to JIPOE, see JP 2-01, Joint and National Intelligence Support to Military Operations.

(2) The Defense Threat Reduction Agency (DTRA). DTRA's mission is to safeguard the US and its allies from global weapons of mass destruction (WMD) threats by integrating, synchronizing, and providing expertise, technologies, and capabilities across all operational areas. DTRA provides key capabilities in support of the JIPOE effort, to include subject matter experts on WMD who can anticipate, model, and mitigate threats across the entire spectrum of chemical, biological, radiological, and nuclear (CBRN) hazards impacting the OE.

(3) National Geospatial-Intelligence Agency (NGA). The director of NGA serves as DOD GEOINT manager and the functional manager for the intelligence community (IC), which includes the processes for tasking imagery and geospatial information collection, processing raw data, exploiting geospatial information and imagery intelligence, and analyzing and disseminating information and GEOINT to consumers. NGA supports the JIPOE effort through GPE. GPE utilizes a four-step process similar to JIPOE, but the information has been modified so that GPE can be understood by both civilian and military personnel and used for both combat and noncombat situations.

For additional information, see JP 2-03, Geospatial Intelligence in Joint Operations.

(4) National Security Agency/Central Security Service (NSA/CSS). NSA/CSS collects, processes, analyzes, produces, and disseminates intelligence derived from foreign electronic signals for national foreign intelligence and counterintelligence (CI) purposes and to support military operations. Additionally, NSA/CSS is tasked with preventing foreign adversaries from gaining access to classified national security systems. NSA/CSS signals intelligence (SIGINT) products help support the JIPOE effort by providing insight into relevant aspects of the electromagnetic spectrum (EMS) and information environment.

(5) Joint Improvised Explosive Device Defeat Organization (JIEDDO)/Counter-Improvised Explosive Device (C-IED) Operations/Intelligence Integration Center (COIC). JIEDDO leads DOD actions to rapidly provide C-IED capabilities in support of CCDRs and to enable the defeat of the improvised explosive device (IED) as a weapon of strategic influence. JIEDDO supports all CCMDs through its three lines of effort (defeat the device, attack the network, and train the force). Each CCMD is assigned a JIEDDO integrator that works closely with the CCMD staff to ensure C-IED operations are integrated as part of the planning and preparing phases of operations. For JIPOE development, the COIC is well suited to provide a fused intelligence product on the capabilities of threat networks that employ the IED as a weapon of choice. The COIC tracks the global illicit and threat network connections through multiple CCMDs, countries, and continents to identify the threat actors who coordinate, supervise, and operate the critical capabilities of the networks. Through the leveraging of fused intelligence with strategic reachback to industry, DOD, government and academia; focused intelligence, surveillance, and reconnaissance (ISR); and

continued exploitation of the critical factors of the threat network operations while integrating the operational capabilities available to the commander, the COIC can provide timely support, including requests for service and requests for discovery of exploitation support.

For additional information about JIEDDO, see Department of Defense Directive (DODD) 2000.19E, The Joint Improvised Explosive Device Defeat Organization.

For additional information on DTRA capabilities, see DODD 5105.62, Defense Threat Reduction Agency.

c. **CCDR.** Via the intelligence planning process, the CCDR, through the CCMD J-2, ensures the standardization of JIPOE products within the command and subordinate joint forces, and establishes theater procedures for collection management and the production and dissemination of intelligence products. The CCDR, through the CCMD J-2, also identifies requirements for federated intelligence support to the JS J-2, which will facilitate the establishment of a federated intelligence support architecture.

d. **Joint Force J-2.** The J-2 has the primary staff responsibility to plan, coordinate, and conduct the overall JIPOE analysis and production effort at the joint force level. Through the JIPOE process, the J-2 enhances the JFC's and other staff elements' ability to visualize all relevant aspects of the OE. JIPOE products usually reflect cross-functional participation by other joint force staff elements (e.g., GPE and MIPOE) and collaboration with various intelligence organizations, USG departments and agencies, and nongovernmental centers that possess relevant expertise. The J-2 uses the JIPOE process to formulate and recommend PIRs for the JFC's approval, and develops information requirements that focus the intelligence effort on questions crucial to joint force planning. To enhance the joint force's common operational picture (COP), the J-2 should integrate component and supporting command IPB products with the joint force's JIPOE products in order to form a more complete and detailed picture of an adversary's capabilities, vulnerabilities, and potential COAs and promulgate these updated products as required. The J-2 also incorporates the available intelligence capabilities of supporting national agencies and joint commands into the JIPOE process, particularly in the areas of GI&S, weapons technical intelligence (WTI), METOC, medical intelligence, sociocultural factors, and strategic targeting. Additionally, the J-2 disseminates JIPOE products in time to support planning by other joint force staff sections and component command staffs, and ensures such products are continuously updated. Due to lack of information, it may be necessary for the J-2 to formulate and propose to the JFC assumptions regarding adversary capabilities. In such cases, the J-2 should ensure that all assumptions are clearly understood by the JFC and the joint force staff to be only assumptions, while at the same time striving to collect the requisite intelligence needed to confirm or deny those assumptions. Most importantly, the J-2 should ensure that possible adversary COAs are not dismissed as "impossible" simply because of their relative degree of difficulty. On the other hand, if a combination of limiting factors associated with OE characteristics and adversary capabilities truly makes a COA physically impossible to accomplish, then the J-2 must identify it as such.

e. **CCMD J-2/Joint Intelligence Operations Center (JIOC).** The CCMD J-2/JIOC is the primary intelligence organization providing support to the CCMD. It integrates the capabilities of national, combat support agency (CSA), and CCMD intelligence assets to coordinate intelligence planning, collection management, analysis, production, and support, and is organized in a manner best suited to satisfy the CCDR's intelligence requirements. The JIOC supports joint operation planning and conducts intelligence operations in support of the commander and staff, subordinate component commands, and joint task forces (JTFs). One of the key functions carried out within the JIOC is JIPOE analysis and production. The JIOC creates and manages collection requirements related to JIPOE and IPB efforts, and produces intelligence products for the CCDR and subordinate commanders that support joint operation planning, execution, and assessment. The JIOC ensures that the JIPOE production effort is accomplished in conjunction with all appropriate CCMD staff elements, particularly the GEOINT, METOC, and information operations (IO) staff elements. The JIOC also integrates and synthesizes the multitude of inputs required to holistically characterize the OE during the JIPOE process. It also ensures its JIPOE analysis is fully integrated with all IPB and JIPOE products produced by subordinate commands and other organizations. The JIOC identifies information gaps in intelligence databases and formulates collection requirements and RFIs to address these shortfalls. Additionally, the CCMD JIOC may be requested to support another CCDR's federated intelligence requirements, to include JIPOE requirements. As a federated partner, and subject to the outcome of CCMD J-2 to CCMD J-2 coordination regarding respective CCDR intelligence requirements or an operation order, the CCMD J-2/JIOC should be prepared to integrate into the overall federated intelligence architecture identified by the supported CCDR.

f. **Subordinate JFC.** The subordinate JFCs provide operation planning guidance to their staffs and ensure that the staff fully understands their intent. Based on wargaming and the joint force staff's recommendation, the JFC selects and implements a friendly COA, and approves the list of associated PIRs and other intelligence requirements.

g. **JTF, Joint Intelligence Support Element (JISE), or JIOC.** The intelligence organization at the JTF level is normally a JISE. However, the limited resources of a JISE will usually preclude a full JIPOE effort at the JTF level without substantial augmentation, reliance on reachback capability, and national-level assistance. To overcome this limitation, the CCDR may authorize the establishment of a JTF-level JIOC based on the scope, duration, and mission of the JTF. Normally larger than a JISE, a JTF JIOC analyzes air, missile and space, ground, and naval order of battle (OB); identifies adversary COGs; analyzes command and control (C2) and communications systems; supports targeting; performs collection management; and maintains a 24-hour watch. Additionally, the JTF JIOC (if formed) serves as the focal point to plan, coordinate, and conduct JIPOE analysis and production at the subordinate joint force level. To support development of JIPOE related products, the DIA forward element (DFE) personnel and liaison officers from DOD intelligence organizations provide the JTF JIOC with the means to obtain national support for the JIPOE effort. The JTF JIOC conducts its JIPOE analysis in conjunction with all other appropriate joint force and component command staff elements, particularly the GI&S and METOC staff officers.

h. Red Teams. CCMD red teams are organizational elements comprised of subject matter experts who provide an independent capability to fully explore alternatives in plans and operations in the context of the OE and from the perspective of adversary and other relevant actors. The use of red teams may facilitate the ability of commanders and their staffs to better understand the adversary and visualize the relevant aspects of the OE. Each CCMD should employ red teams, if established, to address the commanders' most pressing intelligence and operational issues from alternative perspectives, to include assumptions, second-order effects, and unintended outcomes. The red team contributes to each step of the JIPOE process. Ideally, the critical aspects of JIPOE production should undergo red team review to provide an external vantage to help reduce groupthink and other forms of institutional bias.

i. Joint GEOINT Cell. The JFC can establish a GEOINT cell to access authoritative GEOINT data and enhance the joint force's COP. GEOINT support includes imagery, imagery intelligence, and geospatial information across all functions and activities within the organization.

For more detailed guidance, see JP 2-03, Geospatial Intelligence Support in Joint Operations.

j. Subordinate Component Commands. The intelligence staffs of the subordinate component commands should prepare appropriate IPB products for each physical domain and the information environment in which the component command operates. Subordinate component commands should evaluate the specific factors in the OE that will affect friendly, neutral, and adversary COAs in and around their operational area and impact perceptions and support within their area of interest (AOI). More importantly, the analysis of the OE should better define those who are potentially friendly, potentially neutral, and potentially adversarial and the actions which would determine their orientation. These component command IPB products provide a level of detail and expertise that the CCMD should not attempt to duplicate, but must draw upon in order to form an integrated or "total" picture of an adversary's joint capabilities and probable COAs. Accordingly, the component commands should coordinate their IPB effort with the CCMD J-2/JIOC and with other component commands that have overlapping IPB responsibilities. This will ensure their IPB products are coordinated and disseminated in time to support the joint force's JIPOE effort.

k. JIPOE Coordination Cell. The JFC may establish a JIPOE coordination cell (or similarly named entity) to integrate and synchronize the JIPOE effort with various supporting organizations, related capabilities, and appropriate staff functions. The organizational relationships between the JIPOE coordination cell and the organizations that support the cell should be per JFC guidance. Normally, a J-2 representative will chair the JIPOE coordination cell. Organizations participating in the cell provide advice and assistance regarding the employment of their respective capabilities and activities. Figure I-5 is intended as a guide in determining possible cell participants that could help coordinate the JIPOE effort, provide input, or assist in obtaining external support. The JFC should tailor the composition of the cell as necessary to accomplish the mission.

Organizational and functional representation in the JIPOE coordination cell may include, but is not limited to, the following personnel:

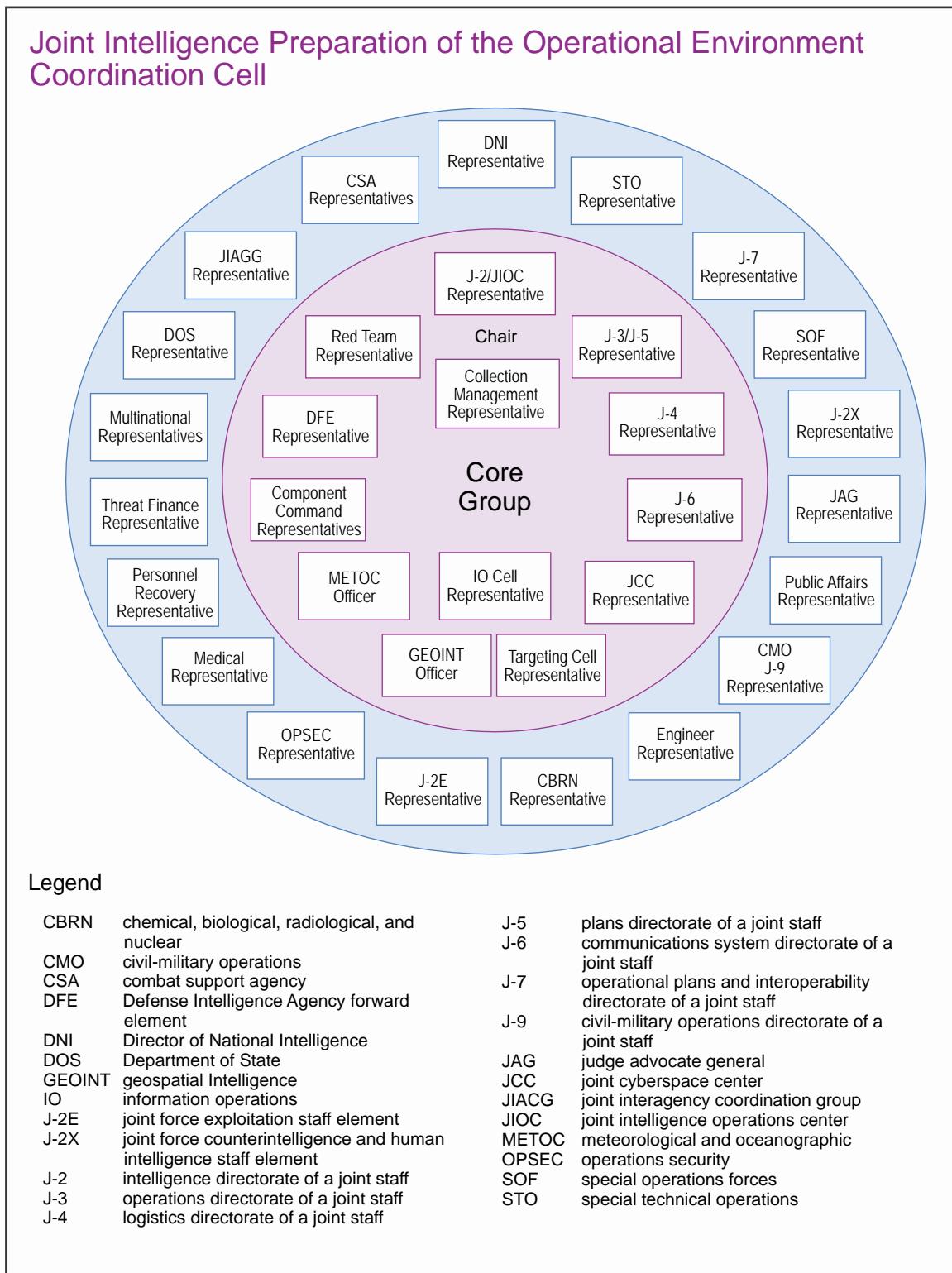


Figure I-5. Joint Intelligence Preparation of the Operational Environment Coordination Cell

(1) **J-2/JIOC Representative.** The J-2/JIOC representative normally chairs the JIPOE coordination cell, oversees the overall JIPOE effort, and participates in CCMD operation planning and assessment working groups. The J-2/JIOC representative also acts as the subject matter expert for intelligence oversight and foreign disclosure issues.

(2) **The Operations Directorate of a Joint Staff (J-3) or the Plans Directorate of a Joint Staff (J-5) Representative.** The J-3 or J-5 representative ensures all participants in the JIPOE effort are continuously updated on planning for current and follow-on missions as well as on any anticipated change to the operational area. This individual reports on friendly COGs, capabilities, and vulnerabilities. The representative conducts wargames that test friendly COAs against adversary COAs developed during the JIPOE process, determines the probability of success of each friendly COA against each adversary COA, and recommends the best friendly COA to the JFC.

(3) **The Logistics Directorate of a Joint Staff (J-4) Representative.** The J-4 staff assists the JIPOE effort by analyzing specific factors that may affect both friendly and adversary sustainment capabilities, reinforcement, and intertheater and intratheater lines of communications (LOCs). Additionally, access considerations are critical to analyze for logistics areas, airfields, and ports of debarkation. The J-4 should also provide specific contracting related information requirements related to the operational area.

(4) **The Communications System Directorate of a Joint Staff (J-6) Representative.** The J-6 representative ensures the JIPOE cell has a clear understanding of friendly communications capabilities and critical assets, nodes, and vulnerabilities. The J-6 representative and staff assist in analyzing the impact of potential adversary COAs and relevant aspects of the information environment and EMS on military operations.

(5) **Joint Cyberspace Center (JCC) Representative.** Serves as liaison with the CCMD's JCC and coordinates JIPOE requirements for CO with the JCC and United States Cyber Command. Helps establish, coordinate, and satisfy JIPOE requirements related to the integrated employment of cyberspace-related capabilities such as offensive cyberspace operations (OCO), defensive cyberspace operations (DCO), and DOD information network operations.

(6) **IO Cell Representative.** The IO representative serves as a liaison with the IO staff and helps establish JIPOE requirements related to the integrated employment of information-related capabilities (IRCs). Provides advice and assistance in evaluating the information environment. IO personnel analyze adversary IRCs and decision making, and help determine adversary COAs.

(7) **Targeting Cell Representative.** The targeting cell representative serves as liaison with the joint force's targeting cell and coordinates JIPOE-derived target placement on the joint target list.

(8) **GEOINT Officer.** The GEOINT officer manages the GEOINT cell to ensure all information fusion, visualization, and analysis are geospatially enabled. The GEOINT officer provides advice and assistance regarding geospatial issues including registering data to a common reference system, and assists JIPOE analysts with map backgrounds and data overlays.

(9) **METOC Officer.** The METOC officer advises the cell regarding the current and predicted METOC environment and the impact of METOC on the employment of friendly and adversary capabilities to enable JOPP, commander's situational awareness, and decision making.

(10) **Service and Functional Component Representatives.** These officers provide liaison between the joint force and the component commands, and can help coordinate the JIPOE effort with the related IPB efforts of the components.

(11) **DFE Representative.** The DFE representative facilitates and coordinates through the JS J-2 national-level support for the JIPOE effort from DOD IC members.

(12) **Red Team.** The CCMD red team supports the JIPOE process by promoting critical thought and encouraging alternative perspectives, and by enhancing understanding of the operational environment and adversary perspective.

(13) **Collection Management Representative.** Serves as liaison with the joint force's collection management cell and coordinates JIPOE-derived collection requirements with the joint collection management board, if designated.

(14) **Public Affairs Representative.** The public affairs representative evaluates the impact of potential operational actions on the OE, assesses adversarial propaganda capabilities and actions, and advises the JFC on how to best counter them. The representative also synchronizes public information activities with operations and articulates US military capabilities and USG actions and policy so audiences may develop informed perceptions of operations.

(15) **Special Technical Operations (STO) Representative.** The STO representative provides information that supports defining the OE (JIPOE step one) and describes the impact of the OE on joint operations (JIPOE step two). The STO representative helps focus the JIPOE effort on understanding STO-related requirements and ensures JIPOE products are fully integrated and coordinated in STO planning. STO read-ins are conducted for appropriate JIPOE analysts based on mission requirements and governing security directives.

(16) **The Operational Plans and Interoperability Directorate of a Joint Staff (J-7) Representative.** The J-7 representative provides advice and assistance regarding JIPOE-related exercise planning, modeling, and simulation, and ensures lessons learned are incorporated into the Joint Lessons Learned Program, as appropriate. (The J-7 is not typically a JTF-level staff directorate.)

(17) **Special Operations Forces (SOF) Representative.** The SOF representative coordinates SOF-related JIPOE requirements and provides input to the JIPOE effort derived from SOF activities and sources.

(18) **Joint Force CI and Human Intelligence (HUMINT) Staff Element (J-2X) Representative.** The J-2X representative coordinates CI and HUMINT input to JIPOE regarding force protection concerns and foreign intelligence collection capabilities and, with the assistance of HUMINT and CI analysts and planners, recommends ways to collect intelligence and detect, identify, assess, exploit, counter, or neutralize foreign intelligence threats.

(19) **Joint Force Exploitation Staff Element (J-2E) Representative.** The J-2E representative integrates and synchronizes technical, forensic, and biometric exploitation entities by identifying required capabilities and establishing C2 processes for collection, exploitation, analysis, and product dissemination.

(20) **Judge Advocate/Legal Staff Representative.** The judge advocate/legal staff representative advises JIPOE coordination cell representatives regarding factors relevant to domestic and international law, such as status of forces agreements, rules of engagement (ROE) and rules for the use of force (RUF), legality of claimed territorial limits, exclusion zones, and other legal parameters that may affect military operations.

(21) **The Civil-Military Operations (CMO) Directorate of a Joint Staff (J-9) Representative.** The J-9 representative assists the JIPOE coordination cell by providing analysis of the civil component of the operational area to include an evaluation of the areas, structures, capabilities, organizations, people, and events relative to the OE. Additionally, advice is provided regarding the rule of law, economic stability, governance, public health and welfare, infrastructure, and public education and information. The J-9 representative may also assist in obtaining support for the JIPOE effort from the host nation (HN), intergovernmental organizations (IGOs), nongovernmental organizations (NGOs), and the private sector.

(22) **Operations Security (OPSEC) Representative.** The OPSEC representative coordinates the joint force's OPSEC effort with the JIPOE effort. The representative uses JIPOE products to help identify existing threats and determine vulnerabilities of friendly forces, develop the critical information list, and implement OPSEC countermeasures.

(23) **Medical Representative.** The medical representative advises and assists the JIPOE effort regarding medical factors that may influence the OE (e.g., potential disease epidemics and vectors, existing health infrastructure, and environmental health risk factors) and provides any available MIPOE.

(24) **Threat Finance Representative.** The threat finance representative coordinates activities to exploit and counter financial networks that negatively affect US interests, and coordinates, through the Under Secretary of Defense for Intelligence, on intelligence issues related to DOD counter threat finance.

(25) **Multinational Representatives.** Multinational representatives provide advice regarding their respective national intelligence capabilities and assist in obtaining support for the JIPOE effort.

(26) **DOS Representative.** The DOS representative to the joint force can coordinate DOS support to the JIPOE effort, particularly regarding political intelligence, diplomacy, and cultural factors.

(27) **Joint Interagency Coordination Group (JIACG) Representative.** The JIACG representative helps facilitate assistance for the JIPOE effort from USG departments and agencies outside the national IC.

(28) **Personnel Recovery (PR) Representative.** The PR representative coordinates the joint force's PR activities within the JIPOE effort, makes CCMD PR nodes aware of relevant JIPOE products and efforts, coordinates PR-specific requirements for inclusion in the JIPOE process, and facilitates JIPOE coordination cell awareness of emerging PR-related intelligence.

(29) **CBRN Representative.** The CBRN representative integrates CBRN information, intelligence and requirements for inclusion in the JIPOE process, advises and assists the JIPOE effort regarding countering WMD operations, capabilities, and tasks, and determines operational effects and impacts due to CBRN threats and hazards that may influence the OE.

(30) **CSA Liaison Officers.** The CSA liaison officers facilitate national-level support for the JIPOE effort from their respective organizations.

(31) **Director of National Intelligence (DNI) Representative.** The DNI representative facilitates and coordinates assistance for the JIPOE effort from members of the national IC.

(32) **Engineer Representative.** The engineer representative provides terrain analysis products of likely operational areas. Engineer reconnaissance and geospatial operations assist in describing the OE's effects on adversary and friendly capabilities and broad COAs.

6. Interagency and Multinational Considerations

Due to the breadth of required subject matter expertise, a comprehensive JIPOE effort based on a holistic view of the OE will normally require expertise beyond the capabilities of the joint force J-2/JIOC and subordinate components. The joint force J-2/JIOC must therefore proactively seek out and exploit all possible assistance from interagency and multinational sources.

a. In particular, the development of a systems perspective will usually require assistance from, or collaboration with, national-level subject matter experts, both within and outside DOD. In this regard, the JIACG, joint force's DNI representative, CSA

liaison officers, and DFE provide mechanisms for obtaining other USG department or agency support for the JIPOE effort.

b. Whenever possible within security guidelines, the JIPOE effort should include participation by the HN and multinational partners. Multinational partners may possess robust intelligence resources, or at least niche capabilities, that may provide invaluable insight regarding particular aspects of the OE. Many of these countries may have extensive regional expertise based on their historical experience (e.g., colonial or trade relationships, past military occupation).

c. A multinational JIPOE effort requires interoperable GEOINT data, applications, and data exchange capabilities. Whenever possible, participants should agree to work on a standard datum to facilitate interoperable JIPOE production. A multinational GEOINT plan should address how all products for use by member forces, including access approval procedures and blending assets into a cohesive production program, are coordinated.

For further information regarding GEOINT support, see JP 2-03, Geospatial Intelligence in Joint Operations.

d. When conducting JIPOE that involves interaction with nonmilitary organizations, it is important to consider the ramifications of labeling information about the OE as intelligence. In many cultures, the perception of intelligence connotes information gathered on a nation's citizenry for exploitative or coercive purposes. Furthermore, attempts to exchange information with many NGOs and IGOs may prove difficult. Most NGOs and IGOs are eager to maintain political neutrality throughout the world and are unlikely to associate with US military organizations or participate in any overt or perceived *intelligence* gathering attempts. Nevertheless, *information* exchange throughout the operational area for the purpose of fostering mutual interests in resolving or deterring conflict or providing support is highly beneficial to all concerned parties. Information exchange should comply with US and DOD security guidelines, and, as appropriate, with limits based on terms of reference provided by the United States Institute for Peace/United Nations (UN) Office for Coordinating Humanitarian Assistance.

7. Relationship to the Levels of Warfare

The basic JIPOE process remains the same across the range of military operations, regardless of the level of warfare. JIPOE production will typically integrate planning considerations from each level of warfare. Nevertheless, specific JIPOE planning considerations may vary considerably between strategic, operational, and tactical levels due to differences in mission, available resources, and size of the operational areas and AOIs. Strategic-level JIPOE examines the instruments of national power: diplomatic, informational, military, and economic. JIPOE support at the operational level analyzes the operational area, provides an understanding of the perceptions and decision-making processes of the adversary and other relevant actors, facilitates the flow of friendly forces in a timely manner, helps sustain those forces, and then integrates tactical capabilities at

the decisive time and place. JIPOE support to tactical operations generally requires a greater level of detail over a smaller segment of the OE than is required at the strategic and operational levels. However, under certain circumstances tactical operations can assume strategic importance and may constitute a critical part of joint operations, as during some types of crisis response and limited contingency operations or military engagement, security cooperation, and deterrence operations.

a. **Strategic-Level Considerations.** Activities at the strategic level establish national and multinational military objectives; develop global or theater campaign plans to achieve these objectives; sequence operations; define limits and assess risks for the use of military and other instruments of national security policy; and provide military forces and other capabilities in accordance with strategic plans. The strategic-level OE may include global aspects due to factors such as international law; adversary proficiency in using messages and actions to influence world opinion and degrade US public support; adversary and friendly structures; and the capability and availability of national and commercial space-based systems and information technology. The strategic-level OE is analyzed in terms of geographic regions, nations, and climate rather than local geography and weather. Nonmilitary aspects of the OE assume increased importance at the strategic level. For example, the industrial and technological capabilities of a nation or region will influence the type of military force it fields. Similar factors may influence the ability of a nation to endure a protracted conflict without outside assistance. In many situations, nonmilitary considerations may play a greater role than military factors in influencing adversary and relevant actor COAs. At this level, the analysis of the adversary's strategic capabilities will concentrate on considerations such as civil-military relations; national ideology, will, and morale; ability of the economy to sustain warfare; mobilization of the strategic reserve; and possible intervention by third-party countries. COA models at the strategic level consider the entire range of resources available to the adversary, to include the mindset of key personalities and populations, and the financial flows and convergence of threat and illicit networks to fund adversary operations. COA models identify both military and nonmilitary methods of power projection and influence, specify the theaters of main effort and the forces committed to each, and depict national as well as strategic- and theater-level objectives.

b. **Operational-Level Considerations.** At the operational level, the analysis of the OE can include considerations such as sociocultural factors, the location of adversary political and economic support structures, military support units, force generation capabilities, potential third-nation or third-party involvement, logistic and economic infrastructure, political treaties, press coverage, adversary information activities, and the potential to affect the information environment. The size and scope of the analysis may also vary depending on particular aspects of the OE being considered. For example, if a landlocked adversary has the capability to conduct space-based intelligence collection or OCO, then the relevant portions of the space domain and the information environment would extend worldwide, while the maritime domain might be minimal. At the operational level, the JIPOE analysis should be tailored to the relevant characteristics in the JTF's OE. While most joint operations may encompass considerations and characteristics associated with many or all PMESII systems, the staff's focus and the

balance of these considerations will vary according to the nature and phase of the operation.

(1) In major operations involving large-scale combat (particularly in early phases), the staff will typically focus on military and infrastructure systems. Relevant characteristics may include:

(a) The capability of road, rail, air, and sea transportation networks to support the movement of, and logistic support to, large military units, to include seasonal climatic impact.

(b) Zones of entry into and through the operational area and AOI.

(c) Levels of third-party nation support adjacent to the operational area (for allies and adversaries).

(d) The impact of large geographic features such as mountains, large forests, deserts, and archipelagos on military operations.

(e) The adversary's doctrine for C2, logistic support, release and use of CBRN threats and hazards, ballistic missile forces, special operations, and paramilitary forces.

(f) The adversary's historical adherence to, and policy for, application of the law of war, and their status regarding international conventions and protocols relevant to the law of war.

(g) Adversary COAs described in terms of operational objectives, large-scale movements, LOCs, and the phasing of operations.

(2) In operations where the focus is on the relevant population, the ability to understand, predict, respond to, or influence the decision making and behavior of relevant actors, in addition to the adversary, is often of greater importance than military and infrastructure systems. While irregular warfare (IW) always requires an understanding of the adversary's military capabilities, additional social, economic, diplomatic, and informational considerations often have increased relevance. Sociocultural analysis (SCA) is particularly useful for understanding these aspects of the OE. Some of these considerations may include:

(a) An assessment of a society's ethnic breakdown and its relationship to the dislocated civilian (DC) problem, religious affiliations, historic grievances and conflict, loyalty to formal and informal leaders, points and dates of cultural significance, and language.

(b) An analysis of the relationship between the populace and the government that is designed to identify ways to gain the population's support for the government and reduce support for the insurgents.

(c) An analysis of the culture of the society as a whole and of each major group within the society.

(d) A determination of how formal and informal power is apportioned and used within a society.

(e) The identification and characterization of relevant actors through identity intelligence (I2) products, which provide an enhanced understanding of how these actors and networks can affect the OE.

c. **Tactical-Level Considerations.** At the tactical level, the analysis of the OE is focused on adversary land, air, maritime, space, and other forces as well as other relevant aspects of the OE that could pose a direct threat to the security of the friendly force or the success of its mission. The extent to which the OE is analyzed at the tactical level is largely dependent on the mission and planning time available. At a minimum, tactical-level forces should analyze the OE in terms of: military objectives; air, land, and maritime avenues of approach; and the impact of METOC and geographic conditions on personnel, military operations, weapons systems, and force mobility. The tactical-level evaluation of a military adversary should concentrate on standard OB factors, such as the composition, disposition, strength, tactics, techniques, and procedures (TTP), and training status of specific tactical units or factional groups that could interfere with mission accomplishment. JIPOE and IPB should emphasize a holistic approach, analyzing both military and nonmilitary aspects of the OE. JIPOE should also account for the relevant conditions in the OE that enable or restrict the actions of friendly, neutral, and hostile populations. At the tactical level, I2, SCA, and a focus on the identification and characterization of relevant actors highlights how people relate to each other, organize and operate within networks, achieve security, acquire/exchange basic resources, and exchange information. These aspects are critical to mission success, especially in phase four of a conventional fight or in all phases of IW and humanitarian operations. The development, analysis, and description of adversary and other relevant actor COAs at the tactical level will be based on and result in a higher degree of detail than would be necessary at higher levels of military operations.

8. Considerations Across the Range of Military Operations

a. Joint forces conduct JIPOE to develop a comprehensive understanding of the OE and assess adversary potential COAs in a wide variety of situations across the range of military operations. In addition to traditional adversaries, the JIPOE effort should encompass other relevant actors to include friendly, neutral, and threat networks that could delay, degrade, or prevent the joint force from accomplishing its mission, as well as those relevant actors that could help the joint force mission. Depending on the mission and situation, other relevant actors could include displaced persons, smugglers, local populace, insurgents, and terrorists. Identifying and conducting a JIPOE analysis of these other types of actors presents a far greater challenge than the analysis of the more conventional “force-on-force” adversary normally associated with major operations and campaigns. The limitation of powers and authorities to deal with nontraditional threats may require an interagency, multinational, and/or international approach to engage

nontraditional network nodes, such as corrupt border control officials, bribed HN law enforcement actors, or black market actors who funnel funds to adversary operations.

b. Since potential adversaries have access to US doctrine, they will probably attempt to exploit the JIPOE process, either through deception or by deliberately adopting a COA different than the one the JIPOE analyst might normally identify as “most likely.” The JIPOE analyst needs to be aware of the relative importance a specific adversary may place on the principle of surprise. The JIPOE analyst should analyze the probability that the adversary may engage in deception by deliberately avoiding the most operationally efficient (and therefore most obvious) COA in order to achieve surprise. To accomplish the deception, the adversary will most likely deliberately provide or highlight expected “indicators” or information to reinforce what our intelligence analysts and forces expect for the “most likely” adversary COA. Additionally, an adversary may deceive the JIPOE analyst regarding the timing of an otherwise “obvious” COA, through asynchronous attack preparations and by psychologically conditioning the JIPOE analyst to accept unusual levels and types of activity as normal. For example, an adversary may choose to prepare for an attack over a deliberately extended period of time. In this case the JIPOE analyst may be able to correctly identify the adversary’s intent and most likely COA (i.e., attack), but will find it more difficult to estimate the actual time of the attack. Analysts may also use a “reverse JIPOE” process to assess their own forces from their opponent’s perspective and thereby “reconstruct” their opponent’s probable JIPOE assessment. This use of red team threat emulation techniques will help yield insight into an adversary’s probable ISR collection strategy and thereby assist planners in determining the best times and locations to plant deceptive information designed to mislead the opposing JIPOE analyst. The red team plays a key role in countering adversary deception efforts and in developing friendly deception plans by providing insight into the adversary’s perspectives and mindset and by exploring potential unintended consequences and second- and third-order effects of proposed deception COAs.

c. JIPOE serves as an authoritative foundation for planning, mission execution, and operational assessment. Accordingly, every practical measure should be employed to ensure JIPOE products are free from analytical error and organizational bias. Red teams can play a vital role during each step of the JIPOE process by helping guard against the effects of human factors (e.g., selective perception, confirmation bias, groupthink), by challenging assumptions and established estimates, and by contributing independent, alternative interpretations of key issues for consideration by the J-2 analysts. In general, red team contributions should be evaluated and, where appropriate, incorporated into the final JIPOE product. Planners should be presented with a single intelligence product that has considered and resolved all perspectives. Where sufficient question remains regarding the validity of differing interpretations and whether these differences could significantly impact operational planning, the JIPOE coordination cell should present alternatives to planners, who may then use them as the basis for branch planning.

d. JIPOE is not a panacea for faulty strategic guidance or poor operation planning. JFCs and their staffs must understand that JIPOE is a useful methodology for analyzing the impact of the OE and adversary patterns of operation, and for formulating a hypothesis regarding the adversary’s possible adoption of various COAs (i.e., what the

AN EXAMPLE OF “DECEPTION AND JOINT INTELLIGENCE PREPARATION OF THE OPERATIONAL ENVIRONMENT”

“The commander must always meticulously think out how to mislead the enemy in regard to the true intentions of the troops. In order to achieve surprise [the commander] may consciously work out some problems of the battle plan in a way different from the obvious solutions demanded by the situation.

An example of skillful selection of the direction of the main strike can be found in the actions of the 65th Army in the Belorussian offensive operation. It was decided that the main attack should be made through a certain piece of marshy terrain because the enemy believed that this area was inaccessible to advancing troops and therefore few forces [were allowed] for its protection. Making use of the surprise factor, Soviet troops managed to quickly cross the marsh and attain the enemy’s flank, which promoted the overall success of the offensive.”

SOURCE: V.G. Reznichenko, ed., *Taktika*, Voyenizdat Press, 1987

enemy may do). It therefore provides a starting point for planning the intelligence collection effort and for formulating and wargaming friendly COAs. JIPOE should not be considered a “crystal ball” for determining with absolute certainty the adversary’s actual intentions (i.e., what the enemy will do). JFCs and their staffs must understand that the JIPOE analyst estimates the most likely adversary COA based largely on factors and conditions in the OE that may change, and on assumptions about the adversary that may later prove invalid. Operation planning based solely on countering the most likely COA will leave the joint force vulnerable to other less likely COAs that the adversary may choose to adopt in order to maximize surprise.

9. Overview of the Process for Joint Intelligence Preparation of the Operational Environment

The JIPOE process provides a disciplined methodology for applying a holistic view of the OE to the analysis of adversary capabilities and intentions. This process consists of four basic steps (depicted in Figure I-6) that ensure the systematic analysis of all relevant aspects of the OE. Each step in this process is discussed in detail in the following four chapters. The process is both continuous and cyclical in that JIPOE is conducted both prior to and during a joint operation as well as during planning for follow-on missions. The most current information available regarding the adversary situation and the OE is continuously integrated throughout the JIPOE process. Although some aspects of the JIPOE process may require adjustment depending on the type of mission, the basic process remains the same throughout the range of military operations. Appendix A, “The Leyte Campaign—A Case Study of Support to Major Operations and Campaigns,” illustrates the basic JIPOE process in a historical context. Military operations that may require slightly different techniques and areas of emphasis are addressed in Chapter VII, “Special Considerations,” and are illustrated in Appendix B,

“Somalia 1992-1993—A Case Study of Support to Stability Operations and Irregular Warfare.”

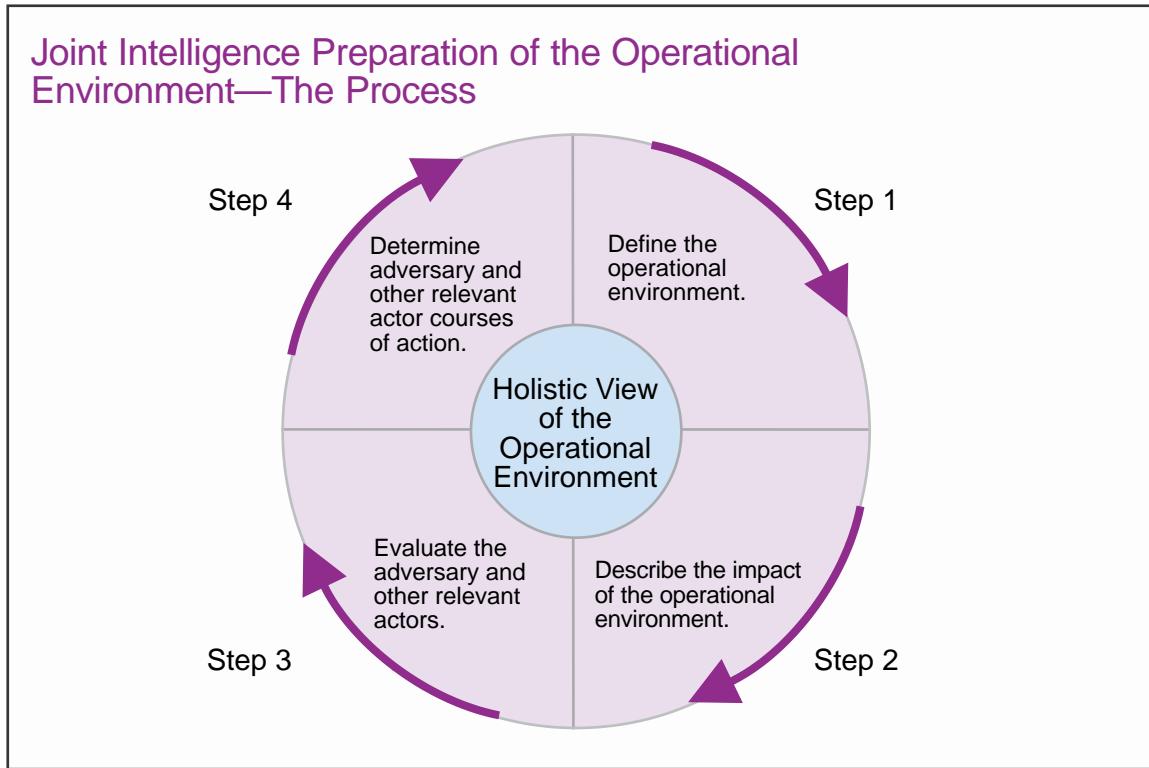


Figure I-6. Joint Intelligence Preparation of the Operational Environment—The Process

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CHAPTER II

DEFINE THE OPERATIONAL ENVIRONMENT—STEP 1

“Unrestricted war is a war that surpasses all boundaries and restrictions. It takes nonmilitary forms and military forms and creates a war on many fronts. It is the war of the future.”

**Colonel Qiao Liang and Colonel Wang Xiangsui,
Unrestricted War, Beijing, 1998**

1. Overview

In the first step of the JIPOE process, the joint force staff assists the JFC and component commanders in defining the OE by identifying those aspects and significant characteristics that may be relevant to the joint force's mission (see Figure II-1). The J-2 staff works with other joint force and component command staff elements to formulate an initial survey of adversary and other relevant characteristics that may impact both friendly and adversary operations. This cursory survey of general characteristics is used by the JFC and joint force staffs to visualize the OE, delineate the AOI, determine information and intelligence gaps and collection requirements, develop realistic assumptions, and provide guidance and direction to the JIPOE effort.

a. Successfully defining the command's OE is critical to the outcome of the JIPOE process. The succeeding steps of the JIPOE process must concentrate on those aspects and characteristics of the OE that could influence the accomplishment of the joint force's mission. Correctly defining the relevant aspects of the OE during this step saves time and effort by focusing the work of the joint force staff on only those characteristics that could influence the JFC's decisions and the selection of friendly COAs.

(1) The geospatial aspects of the OE are defined within the common World Geodetic System reference framework in accordance with Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3900.01C, *Position (Point and Area) Reference Procedures*. Any associated GI&S products developed or used should meet the standards and guidelines of the NGA.

For a detailed discussion of GI&S standards, refer to JP 2-03, Geospatial Intelligence in Joint Operations.

(2) The joint force staff must also recognize and understand those aspects of the OE that transcend the physical characteristics and elements. A holistic view of the OE includes nonphysical aspects that may directly affect, but extend well beyond, the designated operational area. Examples of these nonphysical aspects include the cognitive dimension of the information environment, international public opinion, economic policies, CO, and sociocultural factors and relationships.

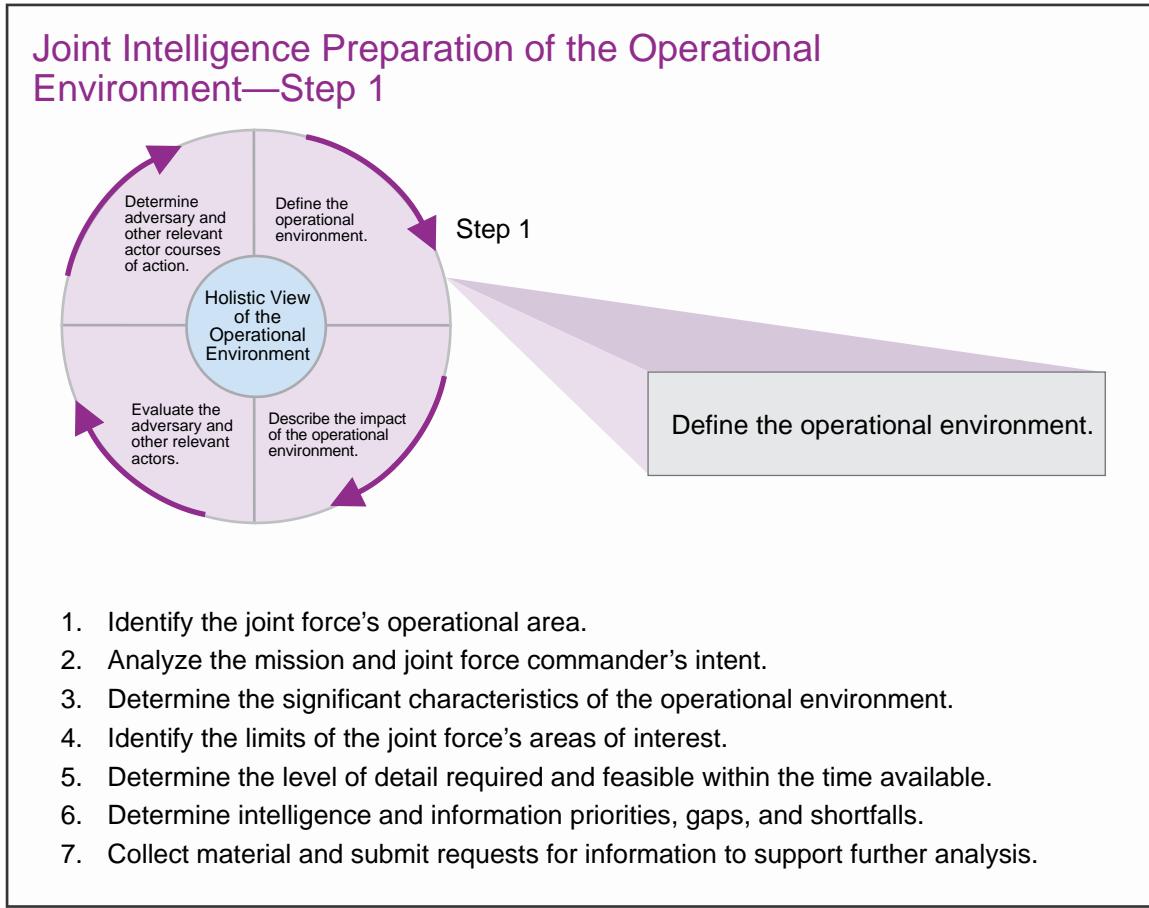


Figure II-1. Joint Intelligence Preparation of the Operational Environment—Step 1

b. Failure to focus on the **relevant** characteristics of the OE leads to wasted time and effort. A poorly focused JIPOE effort may result in the collection and analysis of unnecessary information. More importantly, the failure to identify **all** relevant characteristics may lead to the joint force's being surprised and unprepared when some overlooked aspect of the OE exerts an influence on the accomplishment of the joint force's mission.

2. Identify the Joint Force's Operational Area

When warranted, the geographic combatant commander (GCC) may designate theaters of war and subordinate theaters of operation for each major threat. The boundaries of these areas are normally specified in the operation order or operation plan (OPLAN) from the higher headquarters that assigned the joint force's mission. To assist in the coordination and deconfliction of joint action, JFCs may define operational areas. The size of these areas, and the types of forces employed within them, depends on the scope and nature of the crisis and the projected duration of operations. For operations somewhat limited in scope and duration, GCCs can designate operational areas such as joint operations areas (JOAs), joint special operations areas, joint security areas, amphibious objective areas, or areas of operations. Operational areas may be contiguous or noncontiguous. Normally, noncontiguous operational areas are characterized by

specially designated boundaries and elements of the force that are linked by the CONOPS. The higher headquarters is responsible for the areas between noncontiguous operational areas.

3. Analyze the Mission and Joint Force Commander's Intent

Mission analysis is normally accomplished under the leadership of the JFC and in cooperation with the joint force staff as part of the commander's planning process. The JFC's stated intent and all characteristics of the mission that could influence the JFC's decisions or affect the COAs available to the joint force or the adversary are of special significance to the JIPOE process. In many situations, those characteristics of the joint force's OE will extend far beyond the designated limits of the operational area. For example, in order to protect the force, the JFC should conceptualize the OE as including the surface-to-air missiles, cruise missiles, and ballistic missiles possessed by any third-party nations or potentially hostile groups that could threaten friendly operations, even though they may be located outside the designated boundaries of the operational area. Mission characteristics that could be important include the type of military operation being considered or planned; the purpose of the operation; the amount of time available for planning and execution; the expected duration of the operation; the risks to be managed; and whether multinational forces will be involved. The analyst must also consider the operational limitations (constraints and restraints) levied upon the JFC by the national military leadership which would impact the conduct of operations. For example, restrictions on civilian casualties and declarations of no-strike objects or entities will provide a framework for the scope of the JFC's mission and directly influence the JIPOE effort. JIPOE efforts during mission analysis begin to reveal gaps in understanding of the OE and the adversary, and help to identify initial intelligence requirements to support the commander's decision-making needs.

4. Determine the Significant Characteristics of the Operational Environment

This step consists of a **cursory** examination of each aspect of the OE in order to identify those characteristics of **possible** significance or relevance to the joint force and its mission. This includes a cursory identification of key decision makers and decision-making processes across competitor, adversary, HN, populace, and neutral parties and is a critical part of identifying significant characteristics of the OE. For example, during this step the analysis of adversary and third-party military forces is limited to the identification of those forces that could influence the joint force's mission based on their location, mobility, general capabilities, significant weapons ranges, and strategic intent. A more **in-depth** evaluation of the impact of each relevant characteristic of the OE takes place during step two of the JIPOE process, which is discussed in Chapter III, "Describe the Impact of the Operational Environment—Step 2." Specific adversary capabilities and possible COAs are evaluated **in detail** during the third step of the JIPOE process, which is discussed in Chapter IV, "Evaluate the Adversary and other Relevant Actors—Step 3."

- a. Certain characteristics of the OE may take on added significance based on the type of mission assigned to the joint force. For example, the presence of civilian relief organizations would be an important factor during a foreign humanitarian assistance

operation. During a counterdrug operation, significant characteristics might include the relationships among narcotics-trafficking organizations and the governments in the region. During major operations, significant characteristics of the OE would include the locations of critical resources (such as sources of water during desert operations), the adversary's LOCs and external sources of supply, and the location and viability of friendly and third-party forces. Depending on the assigned mission, economic trade between the adversary and third-party nations could influence the JFC's decision-making process.

b. When identifying the significant characteristics of the OE, all aspects that might affect accomplishment of the joint force's mission must be considered. Depending on the situation, these might include the following:

- (1) Geographical features and METOC characteristics.
- (2) Sociocultural factors (ethnic groups, ideological and political factions, religious groups and sects, age distribution, income groups, public health issues, economic issues).
- (3) Infrastructure, such as transportation, communications, and information systems.
- (4) Operational limitations such as ROE, RUF, or legal restrictions on military operations, as specified in international treaties or agreements.
- (5) All adversary conventional, unconventional, and paramilitary forces and their general disposition, capabilities, and strategic objectives.
- (6) Environmental conditions (earthquakes, volcanic activity, pollution, naturally occurring diseases).
- (7) Cognitive characteristics of adversary decision making (belief systems, historical grievances, values, personal ambitions, national aspirations, etc.)
- (8) All locations of foreign embassies, IGOs, and NGOs.
- (9) Attitude and perception of local population/neutral actor networks toward the US and multinational partners.
- (10) Likely cultural sensitivities associated with advanced technologies such as nonlethal weapons and directed energy systems, and expected effectiveness of plans to counter such sensitivities.
- (11) Criminal and legitimate networks that could be leveraged by the adversary.

5. Identify the Limits of the Joint Force's Area of Interest

The OE encompasses all characteristics, factors, and conditions that must be understood to successfully apply combat power, protect the force, or complete the mission. However, not all of these aspects are relative to **intelligence** responsibilities or capabilities. For example, the logistic capabilities, military training, and morale of **friendly** forces fall outside the responsibilities of JIPOE. Therefore, the JFC and J-2 should identify and establish limits for those physical areas and nonphysical aspects of the OE that are deemed relevant to the JIPOE effort.

a. **Physical Areas.** The pertinent physical areas in the OE include the assigned operational areas and the associated areas of influence and AOIs described in the following paragraphs. Designation of the areas of influence and interest help commanders and staffs order their thoughts during both planning and execution, and help focus the JIPOE effort.

(1) **Area of Influence.** An area of influence is a geographical area wherein a commander is directly capable of influencing operations by maneuver or fire support systems normally under the commander's command or control. The area of influence normally surrounds and includes the assigned operational area, but it can also be comprised of various commerce or population centers, transportation, communication, and social networks, or other geographic areas within the operational area. In unconventional warfare operations, the area of influence may only constitute a small percentage of the total geographic space within the operational area. The extent of a subordinate command's area of influence is one factor the higher commander considers when defining the subordinate's operational area. Understanding the command's area of influence helps the commander and staff plan branches to the current operation that could require the force to employ capabilities outside the assigned operational area.

(2) **AOI.** An AOI is that area of concern to the commander, including the area of influence, areas adjacent thereto, and extending into enemy territory to the objectives of current or planned operations. An AOI serves to focus intelligence support for monitoring adversary, neutral, or other relevant actor activities outside the operational area that may affect current and future operations. The AOI can extend well outside of the area of influence and is not restricted by political boundaries. In combat operations for example, the AOI normally extends into enemy territory to the objectives of current or planned friendly operations if those objectives are not currently located within the assigned operational area. Likewise, if a neighboring country's political developments or support for the adversary might affect the joint force's mission accomplishment, the JFC should include that country within the AOI. The commander can describe the AOI graphically, but the resulting graphic does not represent a boundary or other control measure.

(a) A key consideration in establishing an AOI is the adversary's (and any of its potential allies') capability to project power, provide logistic support, move forces into or through the joint force's operational areas, or conduct overt and covert intelligence operations directed against the joint force. For example, ports and airfields

located outside the JOA would be inside the AOI if they could be used to launch sea and air attacks against the joint force, or resupply and/or reinforce the adversary's forces. Likewise, it is important to consider all possible locations from which an adversary or third party may launch terrorist or unconventional warfare attacks against friendly forces or LOCs. Possible launch sites for ballistic missiles belonging to a country friendly to the adversary that are capable of striking or influencing targets within the operational area should be included in the AOI.

(b) Time is another important factor in establishing the limits of an AOI. When addressing the relationship between time and the AOI, the JIPOE analyst must consider both the adversary's mobility (land, air, maritime, and space) and the amount of time needed to accomplish the friendly mission. For example, if a JFC estimates that it will take 48 hours to complete an operation, the JFC's staff needs to account for all adversary forces or activities that could influence mission accomplishment within that timeframe for the given AOI. For missions that are of relatively short duration, such as noncombatant evacuation operations (NEOs) or raids, the immediate and direct threats to the operation may be the only considerations. In those cases, the AOI might be relatively small. Some long-term missions, such as nation building, that involve many political and economic factors as well as more traditional military factors, may result in establishing a larger AOI.

b. **Nonphysical Aspects.** The joint force staff should also look beyond the geospatial limits of the AOI to identify any nonphysical factors that may impact the accomplishment of the joint force's mission. Many of these factors transcend the traditional concept of physical boundaries and have worldwide implications and relevance. Nonphysical aspects may make the AOI noncontiguous. The information environment allows instantaneous decision making from across the globe. For example, a key decision maker for an adversary or other relevant actor may be in a different country or continent than those for which he makes decisions. Cyberspace facilitates a COP for our adversaries, which allows them to leverage nonphysical aspects of the OE to their advantage. Likewise, the friendly and adversary use of the EMS, time as it relates to decision making, friendly and adversary information systems capabilities and vulnerabilities, the perceptions and attitudes of other relevant actors both inside and outside the operational area, and the relationships (links) among various adversary PMESII system nodes are some examples of nonphysical aspects of the joint force's AOI that should be considered.

6. Determine the Level of Detail Required and Feasible Within the Time Available

The time available for completion of the JIPOE process may not permit each step to be conducted in detail. Overcoming time limitations requires focusing the JIPOE process on the information that is most important to the JFC and subordinate commanders in planning and executing the joint mission. Identifying the amount of detail required to answer the JFC's PIRs avoids wasting time on developing more detail than necessary on any one step of the process.

a. Some situations may not require an analysis of all adversary forces or other aspects of the OE. For example, those adversary forces within the AOI that cannot interfere with the joint operation may require only a summary of their capabilities. In some cases, only select aspects of the OE may require detailed analysis based on the type of assigned mission or other planning considerations.

b. The J-2 consults the JFC and other staff elements to determine the amount of detail regarding the OE that is required to support operation planning. The J-2 plans, prioritizes, and structures the JIPOE effort by balancing the level of detail required with the amount of time available.

7. Determine Intelligence and Information Priorities, Gaps, and Shortfalls

The J-2 staff evaluates the available intelligence and information databases to determine if the necessary information is available to conduct the remainder of the JIPOE process. Red teams assist the commander and staff by conducting critical reviews to identify gaps in data and alternative interpretations of the available data relevant to the OE. In nearly every situation, there will be gaps in existing databases and shortfalls in the ability of the J-2 to fill all of these gaps. These gaps and shortfalls must be identified early in order for the joint force staff to initiate the appropriate intelligence requirements. The J-2 will use the JFC's stated intent, commander's critical information requirements, and initial PIRs to establish priorities for intelligence collection, processing, production, and dissemination.

a. The J-2 must identify and inform the JFC and appropriate staff elements of any intelligence and information gaps that cannot be filled within the time allowed for JIPOE.

b. When necessary, the J-2 staff should formulate reasonable assumptions based on historical or current facts to fill in the gaps. During the remainder of the JIPOE process, and during the commander's decision-making process, the J-2 must ensure that any assumptions that have been made are clearly identified as such.

c. Intelligence analysts should review web-based sites (at all available classification levels) and databases for information that may be applicable to the JIPOE effort. For example, Intellipedia is an Intelink-based encyclopedia of intelligence-related articles and information. Intellipedia articles may provide a listing of, and hyperlinks to, current databases which may be of interest to JIPOE analysts. These databases should be reviewed and evaluated to determine the availability of current data, information, and intelligence products relative to the joint force's OE and mission.

8. Collect Material and Submit Requests for Information to Support Further Analysis

a. Collecting data and incorporating it into the JIPOE process is a continuous effort. The J-2 staff initiates collection requirements and issues RFIs to fill intelligence gaps to the level of detail required to support the JIPOE effort. As additional information and intelligence is received, the J-2 staff or JIPOE coordination cell (if established) update all JIPOE products.

- b. When new intelligence confirms or repudiates assumptions, the J-2 informs the JFC and component commanders and their staffs. If any assumptions are repudiated by new intelligence, the commander, the J-3, and other appropriate staff elements should reexamine any evaluations and decisions that were based on those assumptions.

CHAPTER III

DESCRIBE THE IMPACT OF THE OPERATIONAL ENVIRONMENT—STEP 2

“Know the enemy, know yourself—your victory will never be endangered. Know the ground, know the weather—your victory will then be total.”

Sun Tzu
The Art of War, C. 500 B.C.

1. Overview

The second step in the JIPOE process evaluates and describes broad COAs and the impact of the OE on adversary, friendly, and neutral military capabilities (see Figure III-1). All relevant physical and nonphysical aspects of the OE are analyzed by JIPOE analysts, CCMD personnel, and GEOINT analysts to produce a geospatial perspective. Likewise, a systems perspective is developed through the analysis of relevant sociocultural factors and system nodes and links. Products developed during this step might include, but are not limited to, overlays, diagrams, and matrices that depict the military impact of geography, network analysis, METOC factors, demographics, and the information environment. Other products include assessments of sociocultural factors

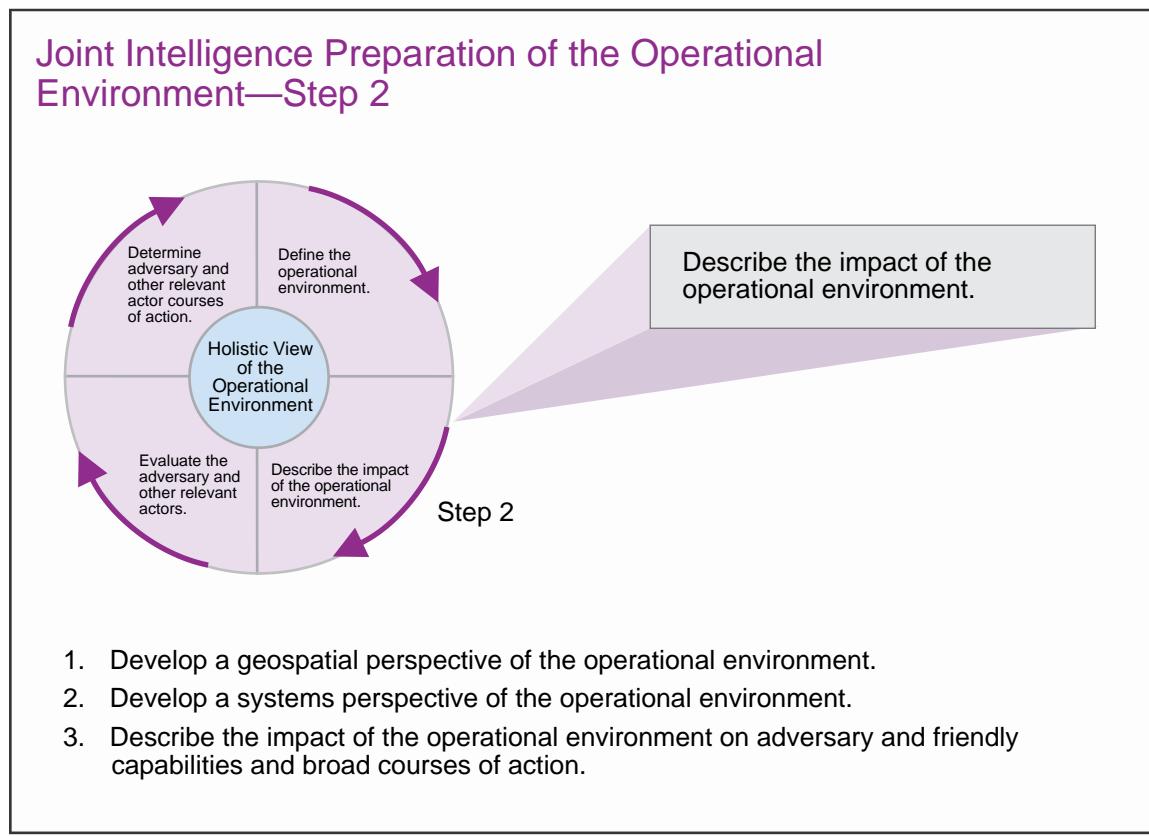


Figure III-1. Joint Intelligence Preparation of the Operational Environment—Step 2

and network analysis diagrams associated with adversary and neutral PMESII and other systems.

2. Develop a Geospatial Perspective of the Operational Environment

A geospatial perspective supports all views of the OE by helping to analyze relevant physical, nonphysical, and locational aspects of the OE. Each aspect of the OE is assessed in a two-step process which analyzes its relevant characteristics and evaluates its potential impact on military operations. Due to the requirements of military planning, the analysis of the joint force's operational areas will generally require more detail than that of the AOI. Additionally, since the physical aspects of the OE are not homogeneous, various land and maritime areas may require greater or lesser analysis depending on the relative geographical complexity of the region. METOC conditions are considered both in terms of their ability to modify individual aspects of the OE as well as their capability to directly affect overall military operations. For example, heavy rainfall may impact the operational area by swelling streams, degrading soil trafficability, reducing overhead reconnaissance capabilities, degrading radio communications, inhibiting port and littoral access, and limiting the effectiveness of weapons systems. These physical effects may also affect economic and political systems and thereby influence the outlook of populations. Analysis should also identify the impact of the environment and weather on the field behavior of CBRN hazards. The destruction of nuclear reactors and CBRN weapons production and storage facilities presents special problems. For each known location of CBRN facilities, the surrounding terrain and forecasted weather conditions and patterns should be analyzed to facilitate modeling of post-attack contamination. Potential dispersal patterns should be drawn downwind from each site to facilitate understanding the potential extent of contamination.

a. **The Land Domain.** Analysis of the OE's land domain concentrates on terrain features such as transportation systems (road and bridge information), surface materials, ground water, natural obstacles such as large bodies of water and mountains, the types and distribution of vegetation, and the configuration of surface drainage. Terrain analysis must always consider the effects of weather as well as changes that may result from military action. For example, freezing temperatures may eliminate the obstacle value of rivers or marshes by freezing the surface sufficiently to allow operational maneuver. Likewise, the mobility characteristics of the operational area can be affected by military actions that may reduce built-up areas to rubble, destroy dams and bridges, and possibly create large concentrations of refugees blocking LOCs. It is also important to analyze the combined effects of wind, temperature, humidity, sunlight, topography, and precipitation on the potential use of chemical and biological weapons and their associated hazards in order to take appropriate passive defense measures. The first step in this process is to analyze the military aspects of the terrain (observation and fields of fire, concealment and cover, obstacles, key terrain, and avenues of approach). This analysis is followed by an evaluation of how the land domain will affect military operations. It is important to remember that terrain analysis is not the end product of the JIPOE process. Rather, terrain analysis is the means to determine which friendly COAs can best exploit the opportunities the terrain provides and how the terrain affects the adversary's available COAs.

(1) **Observation and Fields of Fire.** “Observation” is the ability to see (or be seen by) the adversary either visually or through the use of surveillance devices. A “field of fire” is the area that a weapon or group of weapons may effectively cover with fire from a given position. Areas that offer good observation and fields of fire generally favor defensive COAs. Factors that hinder observation and fields of fire include: the height and density of vegetation and buildings; relief features such as hills and defiles; obstructions to specific lines of sight (LOSs); target acquisition and sensor capabilities; and visibility, precipitation, and cloud cover. The analysis of each limiting factor should be combined into a single product. If time permits, LOS overlays should be prepared to assist the joint force staff in evaluating potential friendly or adversary COAs, operational avenues of approach, and the employment of LOS ground and aerial joint sensors and communications networks. The evaluation of observation and fields of fire facilitates the identification of:

- (a) Potential engagement areas or “kill zones.”
- (b) Defensible terrain and specific system or equipment positions.
- (c) Areas where maneuvering forces are most vulnerable to observation and fire.

(2) **Concealment and Cover.** “Concealment” is protection from observation, and can be provided by features such as woods, underbrush, snowdrifts, tall grass, and cultivated vegetation. “Cover” is protection from direct and indirect fires. It can be provided by such things as ditches, caves, tunnels, river banks, folds in the ground, shell craters, buildings, walls, and embankments. Areas with good concealment and cover favor both offensive and defensive COAs. Since concealment and cover are basically the inverse of observation and fields of fire, the analysis of all four of these categories should be integrated in order to:

- (a) Identify defensible terrain and potential battle positions.
- (b) Evaluate avenues of approach.
- (c) Identify potential assembly and dispersal areas.

(3) **Obstacles.** Obstacles are obstructions designed or employed to disrupt, fix, turn, or block the movement of an opposing force, and to cause the opposing force to commit additional personnel, time, and equipment resources. Obstacles can be natural, man-made, or a combination of both. These can include buildings, steep slopes, rivers, lakes, forests, swamps, jungles, cities, minefields, trenches, and military wire obstacles. An evaluation of obstacles leads to the identification of mobility corridors. This, in turn, helps to identify defensible terrain and avenues of approach.

(a) If time permits, separate obstacle overlays should be prepared to evaluate each of the following categories and factors: vegetation density; surface drainage (stream fordability, swampy areas); natural and man-made obstacles; transportation infrastructure (bridge classifications and road width, slope, and curve

GERMAN ARMOR IN THE ARDENNES FOREST

Intelligence analysts must exercise caution in assessing restrictive terrain. During World War II, German armored forces defied conventional military wisdom and maximized surprise by attacking through the “impassable” Ardennes Forest. As the following extract points out, the Allies were surprised not once, but twice.

“Success in the preservation of secrecy had been a major factor in surprising the French High Command in May 1940. The point on which the main weight of the German offensive would fall had been concealed up to the last moment. By the time French forces had reached the Meuse between Givet and Namur, the German armored divisions were already in sight of the Semois and the French had been surprised while still on the move. But this had happened in the spring and French general staff theory had been that the Ardennes were impassable.”

Guderian’s breakthrough at Sedan had shown up the fallacy of the theory of the Ardennes ‘fortress’. But four years later no one imagined that the same blow would be repeated. The American generals may have been inexperienced on the battlefield, but they had almost certainly studied the 1940 operation.”

SOURCE: Jacques Nobecourt

radius); the lethality and area of predicted CBRN hazard dispersal patterns; and the effects of current or projected METOC conditions. These factor overlays are then combined to form a single product known as the combined obstacle overlay (see Figure III-2).

(b) The combined obstacle overlay is used to depict areas where mobility can be categorized as unrestricted, restricted, or severely restricted. Unrestricted areas are free of any obstacles or restrictions to movement. Restricted areas are usually depicted on overlays by diagonal lines to indicate terrain that hinders movement to some degree. Severely restricted areas are usually depicted by crosshatched diagonal lines to indicate terrain that severely hinders or slows military movement unless some effort is made to enhance mobility. These terrain mobility classifications are not absolute but reflect the relative effect of terrain on types of forces and combat maneuver formations. They are based on the ability of a force to maneuver in combat formations, usually linear, or to transition from one type of formation to another, as opposed to simply moving through a piece of terrain. Identifying an area as “severely restricted” terrain, for example, does not imply that movement through that area is impossible, only that in some military operations it may be impractical. Units moving in column formations along roads generally have little trouble traversing severely restricted terrain.

(4) **Key Terrain.** Key terrain is any locality, or area, the seizure or retention of which affords a marked advantage to either force. Therefore, it is often selected as a decisive point and a tactical-level or operational-level objective. Certain key terrain, such as an airport or seaport, could be designated as an operational-level objective if it significantly affects the JFC’s ability to deploy or employ joint force components. For example, an operational commander may consider as key terrain an urban complex that is an important transportation center, a road network providing passage through restrictive terrain, or a geographic area that provides critical agricultural, industrial, or natural

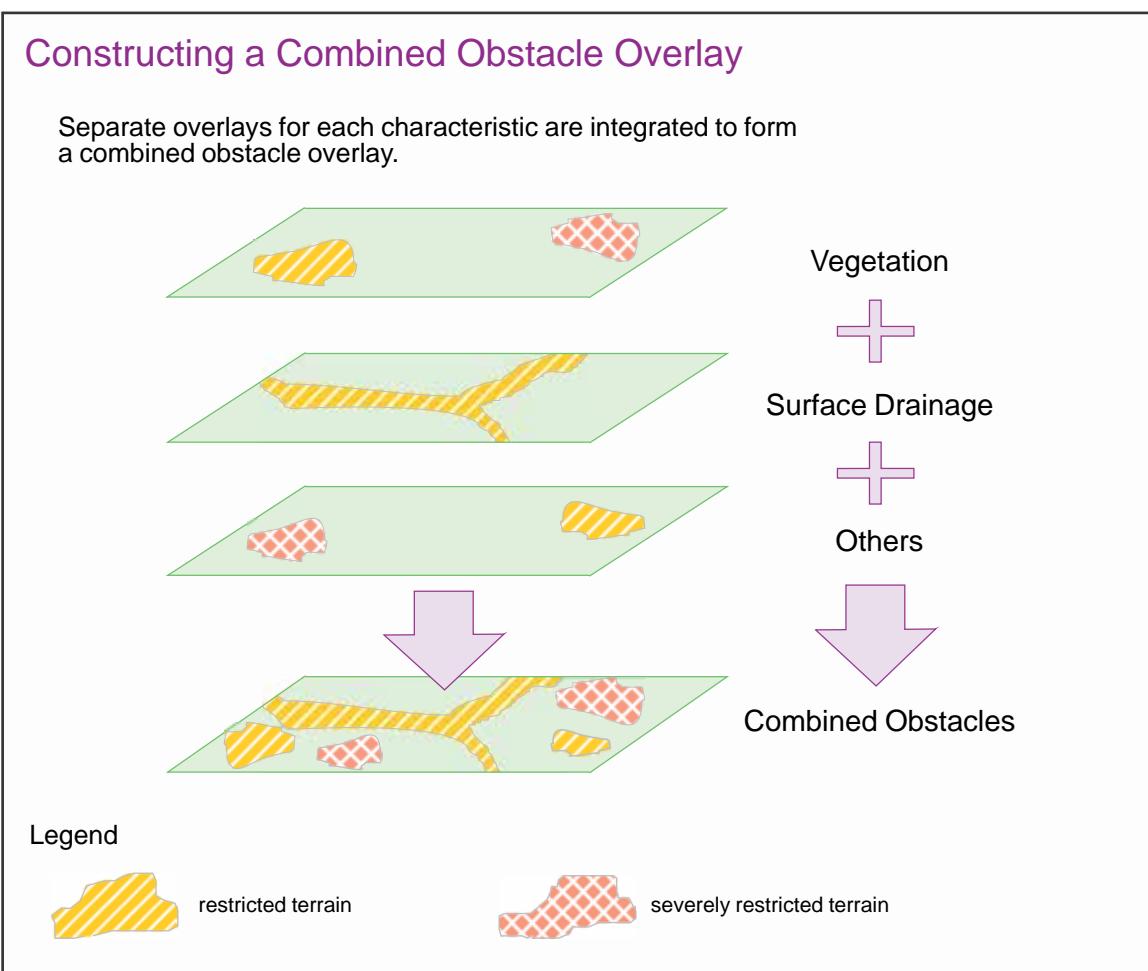


Figure III-2. Constructing a Combined Obstacle Overlay

resources. Key terrain is evaluated by assessing the impact of its seizure by either force upon the results of battle. There are two suggested techniques to assist this analysis.

(a) Evaluate the other four military aspects of the terrain first; then integrate those results to identify and assess key terrain. For example, key terrain might include a range of hills with good observation and fields of fire overlooking an area providing adversary forces a number of high-speed avenues of approach.

(b) Time permitting, conduct a “mini-wargame” to visualize possible outcomes of battle. Key terrain is commonly depicted on overlays with a large “K” within a circle or curve that encloses and follows the contours of the designated terrain. In the offense, key terrain features are usually forward of the friendly force and are often assigned as objectives. In the defense, key terrain is usually within or behind the defensive area and should offer good observation over avenues of approach, and permit the defender to cover an obstacle by fire.

(c) Additional considerations include the following:

1. Key terrain varies with the level of command. For example, a large city may represent an important objective to an operational-level commander, whereas a tactical commander may consider it to be an obstacle.

2. Terrain which permits or denies maneuver, such as bridges or chokepoints, may be key terrain.

3. Major obstacles rarely constitute key terrain. Thus, the high ground dominating a river, rather than the river itself, is considered key terrain.

4. Key terrain may include areas and facilities that may have an extraordinary impact on mission accomplishment (e.g., ballistic missile launch facilities, cruise missile launch sites, airfields).

(5) Avenues of Approach. An avenue of approach is an air or ground route of an attacking force of a given size leading to its objective or to key terrain in its path. The identification of avenues of approach is important because all COAs that involve maneuver depend upon available avenues of approach. During offensive operations, avenues of approach are evaluated in terms of their ability to facilitate friendly maneuver to the objective and the adversary's capability to withdraw from, or reinforce, the objective. Conversely, during defensive operations, avenues of approach are analyzed in relation to their ability to facilitate an adversary's attack on friendly positions and the capability of friendly forces to reinforce the battle area. Avenues of approach should be analyzed using the following procedures:

(a) Identify Mobility Corridors. Mobility corridors are areas relatively free of obstacles where a force can capitalize on the principles of mass and speed, but is canalized due to restrictive terrain along both flanks. In conventional operations, the combined obstacles overlay is used to identify mobility corridors wide enough to permit tactical maneuver. The best corridors contain unrestricted terrain wide enough to permit a force to move in its preferred doctrinal formations while avoiding major obstacles. Normally, mobility corridors are identified for forces two echelons below the size of the friendly force. Mobility corridors also depend on the type and mobility of the force being evaluated. For example, mechanized and armored units generally require large open areas, while dismounted infantry units, insurgents, and terrorists are less hindered by rough terrain and prefer areas that provide some concealment and cover. Infiltrators may actually avoid mobility corridors altogether and instead use routes along ridge lines or defiles.

(b) Categorize Mobility Corridors. Mobility corridors should be categorized according to the size or type of force they can accommodate, such as a mechanized division or an armored brigade. The mobility corridors may also be prioritized in order of likely use. For example, a corridor through unrestricted terrain supported by a road network is generally more desirable than one through restricted terrain without a road.

(c) Group Mobility Corridors to Form Avenues of Approach. Two or more mobility corridors are grouped together to form avenues of approach (see Figure III-3). This grouping may be based on factors such as crossover (gaps in the restrictive terrain separating mobility corridors) or two or more corridors that lead to the same objective. Avenues of approach are normally identified for forces one echelon lower than the friendly command, and may include areas of severely restricted terrain. Avenues of approach are depicted using arrows that encompass the mobility corridors constituting the avenue.

(d) Evaluate Avenues of Approach. Identify avenues of approach to evaluate those which best support maneuver capabilities. Each avenue is evaluated in terms of its suitability for access to key terrain and adjacent avenues, degree of canalization and ease of movement, use of concealment and cover, use of observation and fields of fire, sustainability through LOCs, and directness to the objective.

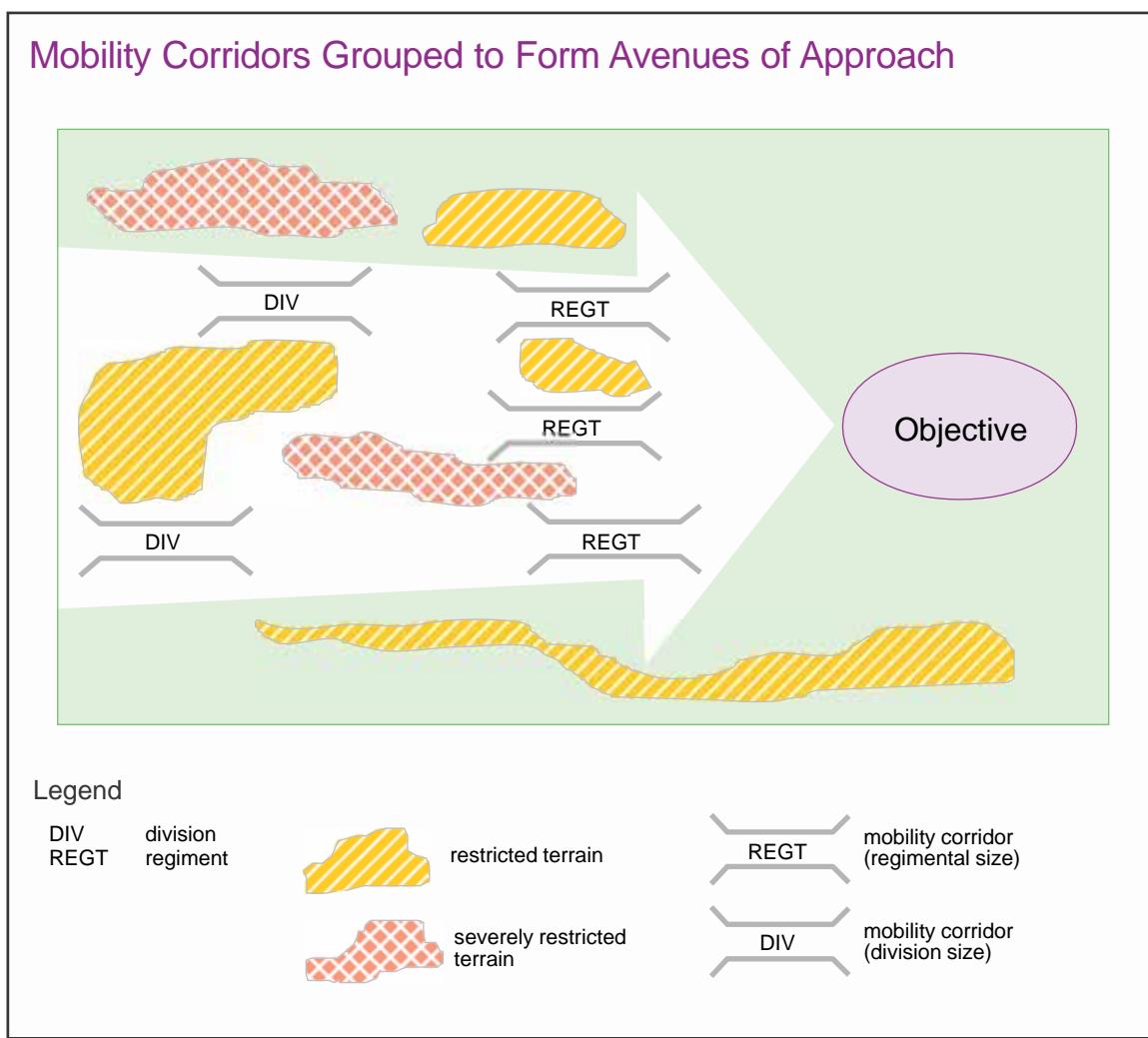


Figure III-3. Mobility Corridors Grouped to Form Avenues of Approach

(e) **Prioritize Avenues of Approach.** Prioritize each avenue of approach based on its overall ability to support maneuver.

(6) **Evaluate the Impact of the Land Domain on Military Operations.** The final step in analyzing the land domain is to relate the evaluation of the military aspects of the terrain to the various broad COAs available to friendly and adversary land forces. For this purpose, COAs are usually identified for offense, defense, reinforcement, and retrograde operations. The possible impact of the terrain on each COA is analyzed to identify areas along each avenue of approach that are suitable for use as potential engagement areas, ambush sites, battle positions, and immediate or intermediate objectives. Engagement areas and ambush sites are usually located in areas with minimal cover and concealment where a maneuvering force will be vulnerable to fire from an opposing force's weapons. Conversely, battle positions are usually selected based on the availability of cover and concealment as well as good observation and fields of fire. The terrain rarely favors one type of operation or COA throughout the entire width and breadth of the OE. For example, areas with poor battle positions and minimally acceptable engagement areas usually favor the offense, whereas the defense is facilitated by good battle positions. Areas of the OE where the terrain predominantly favors one COA over others should be identified and graphically depicted. The most effective graphic technique is to construct a modified combined obstacle overlay (MCOO) by depicting (in addition to the restricted and severely restricted areas already shown) such items as avenues of approach and mobility corridors, countermobility obstacle systems, defensible terrain, engagement areas, and key terrain (see Figure III-4). The results of terrain analysis should be disseminated to the joint force staff as soon as possible, and made available to subordinate and supporting commanders and their staffs, by way of the intelligence estimate, analysis of the operational area, and the MCOO.

b. **The Maritime Domain.** The maritime domain—the world's oceans, seas, bays, estuaries, islands, coastal areas, littorals, and the airspace above them—is a vast maneuver space that allows for tactical maneuver in the air, on the surface, and beneath the surface of the water. However, even in open ocean areas, distant land masses and supporting shore infrastructure may impact naval operations primarily due to the range of an adversary's weapons systems and sensors. Littoral areas may contain geographic features such as straits or chokepoints that restrict tactical maneuver or affect weapon and sensor effectiveness. Both the open ocean and littoral portions of the operational area and AOI should be analyzed. Key military aspects of the maritime domain can include maneuver space and chokepoints; natural harbors and anchorages; man-made infrastructures; sea lines of communications (SLOCs), whether the nation is a signatory to the UN Convention on the Law of Sea, and ocean surface and subsurface characteristics.

(1) **Maneuver Space and Chokepoints.** Surface ships compensate for the sea's lack of cover and concealment by utilizing maneuver to reduce an adversary's ability to locate them at a specific time and place. Confined ocean space limits the ability to maneuver a maritime force, thus increasing the danger that it can be located and engaged. Additionally, the proximity of a maritime force to land increases the potential threat from an adversary's antiship missiles and aircraft. A maritime force operating in

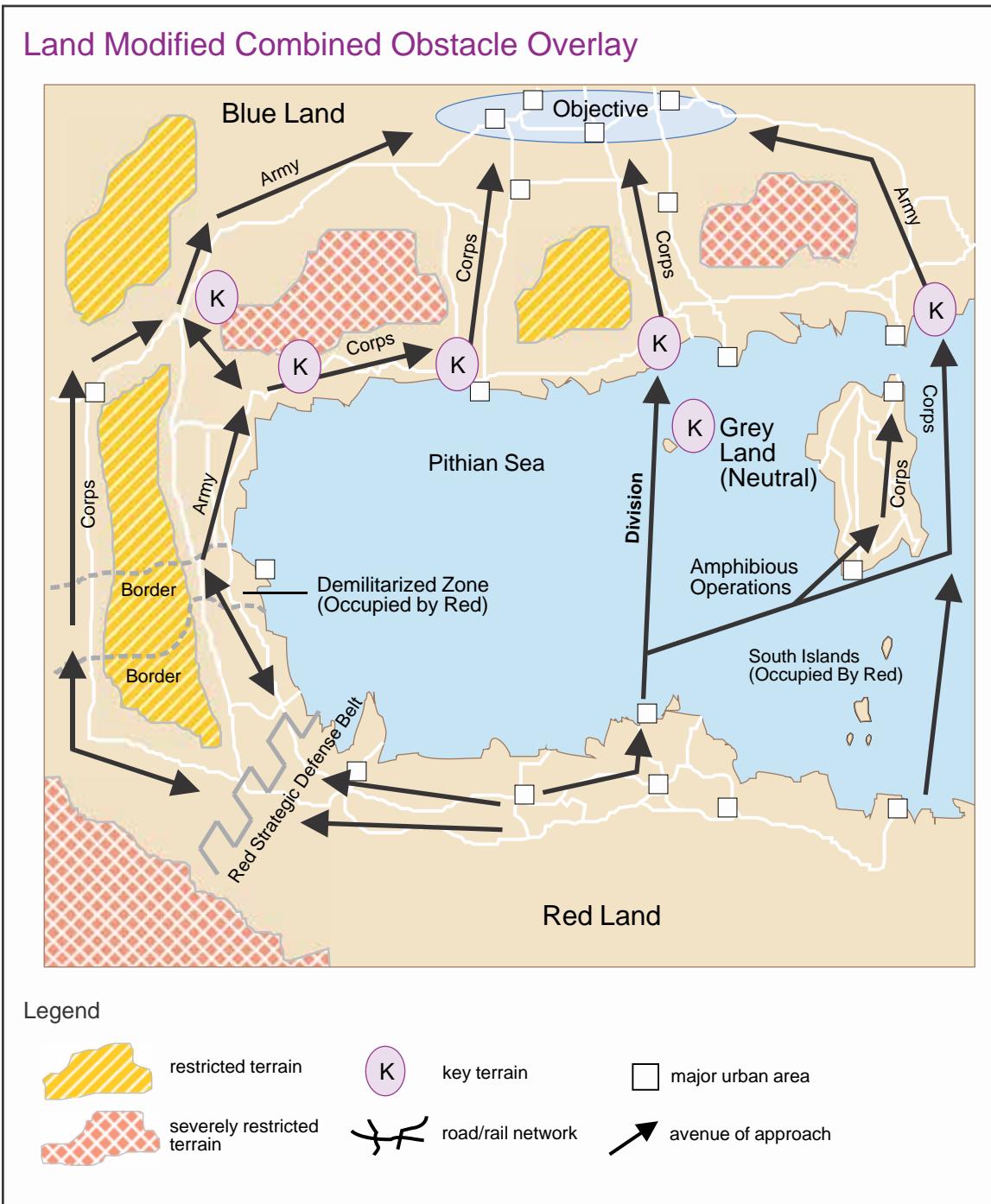


Figure III-4. Land Modified Combined Obstacle Overlay

confined waters near an adversary's shore-based air or missile assets may have insufficient warning time available to counter an incoming air threat. This is because the effectiveness of a maritime force's air defense system is largely dependent on the range at which an air threat can be detected. Chokepoints such as straits or narrows are extremely hazardous areas due to their ability to severely limit tactical maneuver. This effect is magnified for task force operations, as some ship formations may be forced to "close up"

in a confined water space and the area required for a multiship formation to maneuver is significantly greater than for an individual ship. Finally, the effectiveness of sea mines can be greatly enhanced in confined waters.

(2) Natural Harbors and Anchorages. Natural harbors and anchorages may be exploited by friendly or adversary naval forces and should be identified and analyzed. Depending on the surrounding terrain, some natural harbors and anchorages, such as fjords, may offer limited cover and concealment for naval combatants and may afford the adversary an opportunity to launch unexpected sorties against friendly ships. Likewise, friendly forces may utilize these areas as havens to frustrate an adversary's attempts to locate and target them.

(3) Man-Made Infrastructure. All man-made infrastructure capable of influencing naval operations in the AOI should be identified and analyzed. This includes civilian port facilities, naval bases, airfields, and occupied and unoccupied antiship missile sites. The capacity of civilian port facilities is particularly important when analyzing adversary and friendly logistic support capabilities. Naval bases should be analyzed in relation to how well they are positioned to support sea control, power projection, or amphibious operations in adjacent waters.

(4) SLOCs. SLOCs should be identified and analyzed with regard to their relative importance to adversary, friendly, and neutral countries in the AOI. Potential interdiction areas (such as chokepoints) along SLOCs should be identified along with the naval bases, coastal defense facilities, and airfields from which such interdiction operations might originate. Additional factors for consideration include the type, density, and ease of identifying shipping along the SLOCs.

(5) Ocean Surface Characteristics. The ocean surface environment actually varies widely depending on METOC conditions. The senior METOC officer (SMO) evaluates the effects of seasonal METOC variations on maritime surface operations throughout the AOI. Examples of some important METOC considerations include winds and temperature. Winds and storms provide the mechanism for wave formation, and therefore determine ocean surface roughness or sea state. Sea state is a major factor in determining the feasibility of naval operations and the functionality of maritime weapons platforms. Temperature controls the extent of ice formation and impacts the strength and direction of ocean currents. The presence of ocean ice is a significant seasonal variable that directly affects navigation, port operations, and harbor availability. In some instances, severe ice conditions may force naval units to seasonally redeploy to alternate bases. The presence of ocean currents is an important real-time variable that directly impacts navigation and naval operations.

(6) Ocean Subsurface Characteristics. The subsurface characteristics of the ocean are crucial to the conduct of submarine, unmanned underwater vehicle, antisubmarine, and mining operations (collectively known as undersea warfare). Sonar capabilities are significantly affected by such METOC variables, to include: the composition of the sea bottom, saline content and water temperatures at various depths, the presence of ocean currents and eddies, and the ambient noise in various areas of the

ocean. Warfighters also need to have knowledge of the optical properties of the water column in order to assess surface and sub-surface non-acoustic detection vulnerability, laser scan system effectiveness, and diver vulnerability/visibility during diver operations. This includes an understanding of the bioluminescence potential in an area that can light up an adversary and/or friendly forces at night. Bathymetry can provide submarines with a maritime version of terrain masking and avenues of approach. Ocean depth is another example of a subsurface METOC characteristic vitally important to naval operations. For example, availability of convergence zone acoustic propagation path requires depth excess. Ocean depth is also particularly crucial when conducting underice operations, as the varying thickness of ocean ice creates a ceiling that may severely restrict a submarine's vertical maneuvering room. In addition, utilization of oceanographic models that provide bathymetric estimations and oceanic feature forecasts can be used to advantage by the warfighter during operational planning and decision-making processes.

(7) Littoral Characteristics. Characteristics such as beach gradient and composition, coastal terrain features and transportation infrastructure, tides, and currents are critical factors in planning and conducting naval operations. For example, due to the relatively flat trajectory of naval gunfire, coastal ridgelines running perpendicular to the direction of fire facilitate terrain masking. Good amphibious landing sites depend not only on beach gradient and composition, but should also be able to access coastal transportation infrastructure to facilitate the rapid movement inland and the capture of key terrain. The SMO assesses the effects of the current and predicted littoral METOC environment on friendly and/or adversary amphibious operations.

(8) Potential Carrier-Based Aviation and Sea-Launched Cruise Missile (SLCM) Locations and Operational Areas. If the adversary has an aircraft carrier, submarine, SLCM capability, bodies of water in the AOI should be analyzed to determine possible deployment locations. Aircraft carrier task forces normally require adequate sea space in which to maneuver and maintain security. Aircraft carriers will generally avoid confined or restrictive bodies of water along an adversary's littoral. However, they may operate in such waters if the threat level is low, if the operation requires them to, or if they can take advantage of geographic characteristics such as terrain masking. Identifying potential SLCM launch locations is more problematic, and depends largely on factors such as target location, SLCM range, and the adversary's launch platform (i.e., surface combatant vice submarine). For example, bottom composition and fathom curves need to be analyzed to determine possible submarine locations within SLCM range of potential targets.

(9) Evaluate the Impact of the Maritime Domain on Military Operations. The military characteristics of the maritime domain should be evaluated to determine how they may affect adversary and friendly COAs. This should include an evaluation of various bodies of water and littoral areas in the OE to determine if they constitute key geography. For example, the control or denial of a body of water near an amphibious landing site, or adjacent to an avenue of approach running along a coastal plain, may be critical to either friendly or adversary joint operations. The locations of naval bases should be evaluated in relation to their ability to support sea control or amphibious operations in these key geographic areas. Additional key geography might include

features such as chokepoints, canals, rivers, harbors, ports, air bases, and islands. The evaluation of potential key geography must be based on the degree to which such maritime features control or dominate the OE or give a marked advantage to either adversary or friendly joint COAs; for example, the Strait of Gibraltar and Suez Canal control the ability to reinforce or resupply operations in the Mediterranean Sea and Persian Gulf, air bases in Iceland dominate the North Atlantic shipping lanes in mid-ocean, and Diego Garcia serves as a maritime pre-positioning base to support joint operations in the Indian Ocean and Persian Gulf. During amphibious operations, the evaluations of the maritime and land domains should be combined to identify amphibious landing areas that not only can be supported from the sea, but also connect with advantageous land avenues of approach leading to key terrain objectives. Other environmental characteristics to consider include the degree to which areas with limited sea room may limit naval capabilities, areas where ocean subsurface characteristics may degrade sonar or facilitate the use of naval mines (e.g., currents, temperature gradients, and bottom geography), and areas within range of an adversary's land based antiship missile sites and airfields. The locations of the adversary's naval bases should be evaluated in relation to how well they support adversary joint force capabilities to attack, defend, reinforce, or retrograde. Adversary axis and avenues of approach, high-risk areas, low-risk areas, and potential naval engagement areas should be identified. All significant characteristics of the maritime domain should be graphically portrayed on a MCOO (see Figure III-5). The end result should be an evaluation of how the maritime domain helps or hinders forward presence, deterrence, sea control, power projection, or amphibious operations in and around the key geographic areas identified as crucial to adversary and friendly joint COAs.

c. **The Air Domain.** The air domain is the operating medium for fixed-wing and rotary-wing aircraft, air defense systems, unmanned aircraft systems, cruise missiles, and some ballistic and anti-ballistic missile systems. Aerial avenues of approach are different from maritime and ground avenues. Nevertheless, the air domain is partially influenced by surface characteristics. For example, some military air operations may take advantage of terrain masking. The location or potential location of airfields, missile sites, aircraft carriers, cruise missile submarines, and hardened launch silos also affect air operations and should be considered when analyzing the air domain. Surface characteristics such as triple canopy jungle and dense urban areas may present difficulties for collection and target recognition/acquisition. Similarly, urban environments present greater risk of unwanted collateral damage and civilian casualties resulting from lethal operations. Additionally, the effects of METOC conditions on the air domain are particularly crucial. For example, the combination of mountain peaks and a low cloud ceiling may make air operations hazardous or unfeasible for some types of aircraft and optically guided weapons.

(1) **Target Characteristics and Configuration.** Based on an analysis of the joint force's mission and broad adversary COAs, potential targets should be identified and analyzed. A target is an entity that performs a function for the adversary considered for possible engagement or other actions. Targets should be grouped into packages according to whether they would support an adversary's offensive or defensive air posture. For example, adversaries will normally allocate a portion of their available

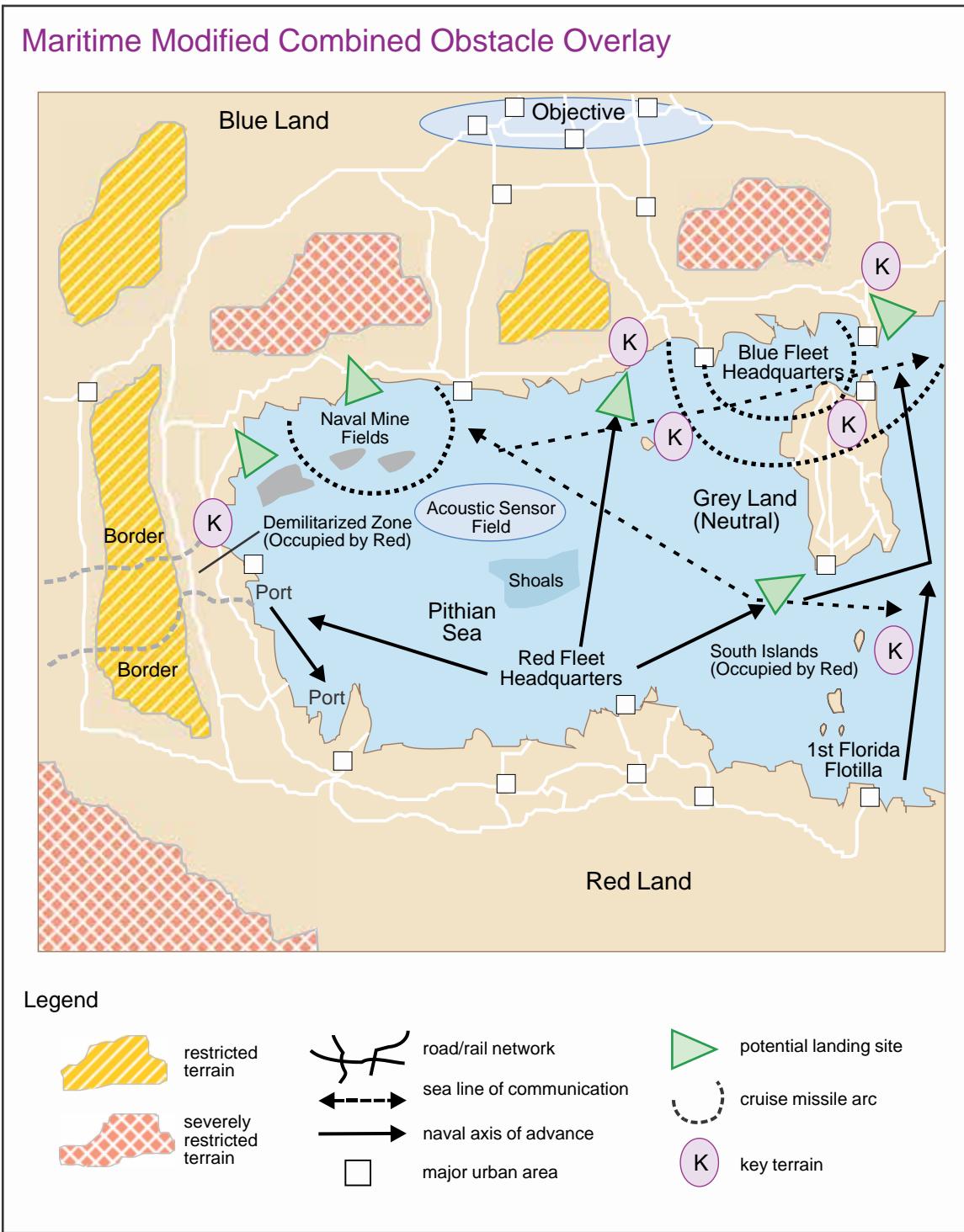


Figure III-5. Maritime Modified Combined Obstacle Overlay

aircraft to defend their own high-value facilities; such infrastructure would therefore constitute an adversary's "defensive" air posture target set. Likewise, assets critical to friendly forces would constitute an adversary's "offensive" air posture target set. These target areas are then analyzed in relation to various factors that may influence how they are attacked and from which direction. These factors may include whether the target is

hard or soft, the presence of nearby air defenses, and the characteristics of surrounding terrain features. For example, some deep underground facilities may require the use of deep earth penetrators dropped from a higher altitude than would otherwise be necessary for a low-altitude attack against a soft target, or may require functional defeat by attacking the target's links to the outside world. Air defense system capabilities may drive the air attack profile to high-, medium-, or low- profile. Consequently, factors such as terrain masking and potential air defense envelopes are crucial considerations in analyzing potential air attack profiles in the target area. The ultimate purpose of this type of target analysis is to determine the optimal air attack heading and profile. The attack heading can then be combined with an analysis of airfield locations and an evaluation of the terrain to determine appropriate air avenues of approach. Analysts conducting JIPOE should maintain a relationship with targeteers at both the JTF and component command levels.

(2) Airfields and Support Infrastructure. All current and potential airfields within range of identified target areas should be identified and analyzed. These should include not only military airfields, but also civilian or abandoned airfields capable of being rapidly modified to support air operations. Additionally, potential tactical aircraft landing zones such as stretches of highway, soccer fields or stadiums, or dirt landing strip locations should be assessed. Also, terrain should be evaluated to locate potential sites for future air bases, and to determine whether elevation will be a limiting factor to the type of aircraft staging out of a specific airfield. Airfield analysis should include all those able to host rotary-wing, fixed-wing, or tiltrotor aircraft. The analysis of current and potential military airfields should consider factors such as:

- (a) Runway length, width, weight-bearing capacity, elevation, lighting, navigation aids, and potential for expansion.
- (b) Proximity to logistic support and LOCs.
- (c) Amount of space available to park military aircraft and their requisite support infrastructure, to include materials handling equipment.
- (d) Availability of food and water.
- (e) Suitability of C2 infrastructure.
- (f) Availability, capacity, and hardness of storage facilities for petroleum, oils, and lubricants.
- (g) HN military or civilian support capabilities.
- (h) Base security required/available.
- (i) Relevant legal requirements (law of war).

(3) Missile Launch Sites. Maximum range arcs should be drawn from all known adversary ballistic and cruise missile launch sites. These should include fixed

sites as well as garrison locations of mobile missile units. The terrain surrounding mobile missile garrison locations and likely missile operating areas should be analyzed to determine possible pre-surveyed launch, hide, and reload locations. Cross-country movement analysis should be conducted to determine likely operating areas for mobile systems. Likely deployment locations should also be identified for mobile missile units accompanying forward ground forces. Possible hide and reload locations for forward-deployed mobile missiles might include forested areas with good access roads, highway underpasses, warehouses, and possibly urban areas. Friendly forces and critical resources within range of the adversary's potential launch sites should be identified. This in turn will facilitate the determination of likely adversary ballistic missile trajectories and launch azimuths.

(4) **Surface Features and Service Ceilings.** The analysis of surface features and service ceilings between the airbase and target area will facilitate the identification and evaluation of air avenues of approach. Terrain is critical to air route planning. Both man-made and natural features can represent obstacles to low-flying aircraft, especially those using a terrain corridor as an air route. Flight obstacles could include objects or features such as high-tension power lines, bridges, high-rise buildings, dams, towers, or bends in the terrain corridor too sharp for high-performance aircraft to negotiate. Service ceilings are another aspect of the environment that are crucial to route planning. Operations at extreme altitudes (in some mountain ranges or highland plateaus) will often preclude the effective use of rotary-wing aircraft. This may be due to an inability to carry sufficient amounts of ordnance, inadequate environmental support for aircrews, or exceeding the aircraft's operational ceiling.

(5) **Air Avenues of Approach.** Air avenues of approach differ from ground avenues of approach in that the former are three-dimensional and are often unconstrained by geographical features. Air avenues of approach consider nongeographic aspects of the environment, such as overflight restrictions, aircraft performance characteristics, counterair capabilities, early warning radar coverage, and the locations of air defense envelopes. The availability of vertical and horizontal airspace for deconfliction between aircraft is also a factor. Under certain circumstances terrain, in combination with adversary capabilities, can influence the choice of particular routes. For example, terrain corridors are usually desirable for rotary-wing aircraft, because they afford some defilade from air defense systems located outside the corridor. Conversely, air avenues of approach in an urban environment are often restricted due to man-made obstacles (e.g., power lines, building height and the possibility of man-portable defense systems) hidden within the city. The evaluation of terrain corridors for potential use by rotary-wing aircraft as air avenues of approach must pay particular attention to the location of any natural or man-made obstacles to flight within the corridor. Depending on aircraft vulnerability to detection, terrain masking may be desirable to provide concealment from ground observation or radar acquisition. Additionally, areas along potential air avenues of approach that provide good terrain background (ground clutter) against look-down and shoot-down radar are particularly important to low-flying aircraft.

(6) **Evaluate the Impact of the Air Domain on Military Operations.** The final step in the process is to evaluate the overall impact of the air domain on adversary

and friendly capabilities to conduct offensive and defensive air operations and to support broad multi-Service or joint COAs such as to attack, defend, reinforce, or retrograde. All militarily significant characteristics of the surface and air environments that may constrain or facilitate air operations should be graphically portrayed on a MCOO (see Figure III-6).

(a) **Air Operations Sustainment.** Air assets must be able to sustain a sortie rate sufficient to accomplish all the objectives of the air portion of a campaign. Critical factors in a force's ability to sustain air operations include: air crew availability and training readiness, aircraft utilization rates, availability of fuel and ordnance, effectiveness of force protection measures, the capability of support infrastructure, the availability of drop zones or extraction zones, and the capacity of LOCs between airfields and logistic support facilities. The JIPOE analyst must be prepared to address the ways in which these factors will impact sortie rates.

(b) **Operating Altitudes and Ranges.** Air operations will utilize a wide variety of aircraft performing many types of missions, to include counterair, air interdiction, close air support, strategic attack, airlift, special operations, intelligence collection, air refueling, and combat search and rescue. In performing these missions, aircraft will have to operate at different altitudes and ranges for different periods of time. The JIPOE analyst must therefore be thoroughly familiar with terrain elevations and seasonal variations in air density in the operational area, as well as with overflight restrictions and adversary air and/or air defense capabilities and envelopes. In this way, the analyst will be able to identify and propose appropriate locations to establish assembly areas, penetration axes, and orbit points.

(c) **Mission Execution.** The JIPOE analyst should identify any environmental factors that may assist or hinder the accomplishment of an air mission. These factors may include potential sources of collateral damage; the use of camouflage, concealment, and deception in the target areas; the location of adversary air defense systems along air avenues of approach; the location of flight obstacles; and weather.

(d) **Air Engagement and Ambush Areas.** Combat air patrol areas, air defense sites, and early warning and passive detection system locations are greatly influenced by terrain. These assets will usually be positioned to maximize optical and radar LOS and avoid terrain masking. The analyst should be prepared to identify those areas of the OE where air defense systems and terrain features can be integrated to form optimal air engagement areas and ambush sites.

d. **The Space Domain.** Forces that have access to the space domain are afforded a wide array of options that can be used to leverage and enhance military capabilities. Every country has access to either its own satellites or to those of another country or commercial entity through the purchase of services. Thus the monitoring and tracking of friendly, hostile, and even neutral space assets is necessary for a complete understanding of the OE.

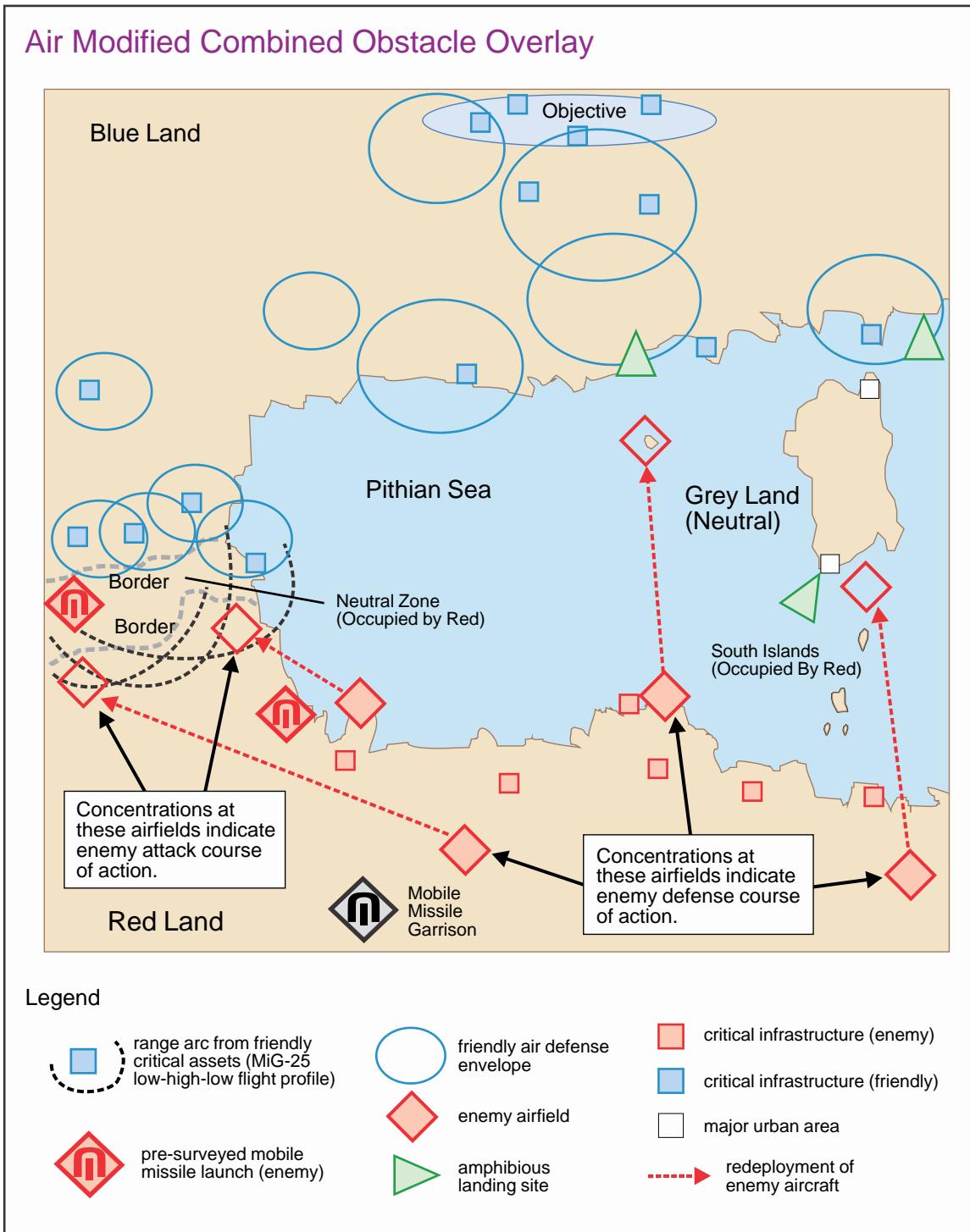


Figure III-6. Air Modified Combined Obstacle Overlay

(1) United States Strategic Command is responsible for monitoring foreign space activity and performing all-source analysis of foreign space operations. However, the joint force JIPOE analyst also needs to be familiar with some characteristics of the space environment in order to effectively integrate space intelligence assessments into the overall JIPOE analysis and to formulate appropriate RFIs. The following environmental

characteristics have the greatest potential for affecting the military use of space for both friendly and adversary forces:

(a) **Orbital Mechanics.** Earth satellites are subject to physical laws that constrain their orbits, and their orbital parameters are governed by somewhat predictable forces. Thus, a satellite's orbit must be known to allow the JIPOE analysts to determine its impact on supporting operations. These constraints and parameters can be used to predict satellite locations and to assess satellite functions and capabilities based on their association with various types of orbits. Factors that constrain satellite orbits include inclination and launch location, orbit type and altitude, and orbital plane and launch windows.

(b) **Propagation.** Although electromagnetic energy essentially passes unattenuated through space, electromagnetic energy associated with communication and navigation satellite systems and reconnaissance and Earth-sensing satellites are significantly impacted by atmospheric parameters such as temperature, moisture, and pressure as the energy enters the Earth's atmosphere. Atmospheric absorption and scattering also impact space asset electromagnetic propagation performance as the energy enters the Earth's atmosphere.

(c) **Orbit Density and Debris.** Depending on their relative utility for civil and military applications, some orbits contain greater numbers of satellites than others. This "clustering tendency" presents a wide range of problems for space operations planners related to launch window planning, satellite positioning, and space control. A related problem to orbital density is the increasing amount of space debris in orbit.

(d) **Solar and Geomagnetic Activity.** Space weather phenomena occur within the space and near-Earth environment and typically originate from solar flares and coronal mass ejections. Solar flares, charged particles, cosmic rays, the Van Allen radiation belts, and other natural phenomena in space can degrade terrestrial radio and satellite communications, degrade radar systems, induce electrical anomalies on spacecraft, and pose a radiation hazard to high-altitude flight and space operators. Electrical grid damage or disruptions can occur during the most intense solar storms. This can impact global positioning satellite accuracy, high-frequency communication, airborne communications relay, and space-based reconnaissance for a period of time in a specific location.

(e) **EMS Dependency.** Space-based assets depend on the EMS as their sole medium for transmitting and receiving signals. The electromagnetic frequencies that most space-based systems use are fixed and cannot be changed after launch.

See JP 3-14, Space Operations, for additional information on space characteristics. See JP 3-59, Meteorological and Oceanographic Operations, for additional information on METOC.

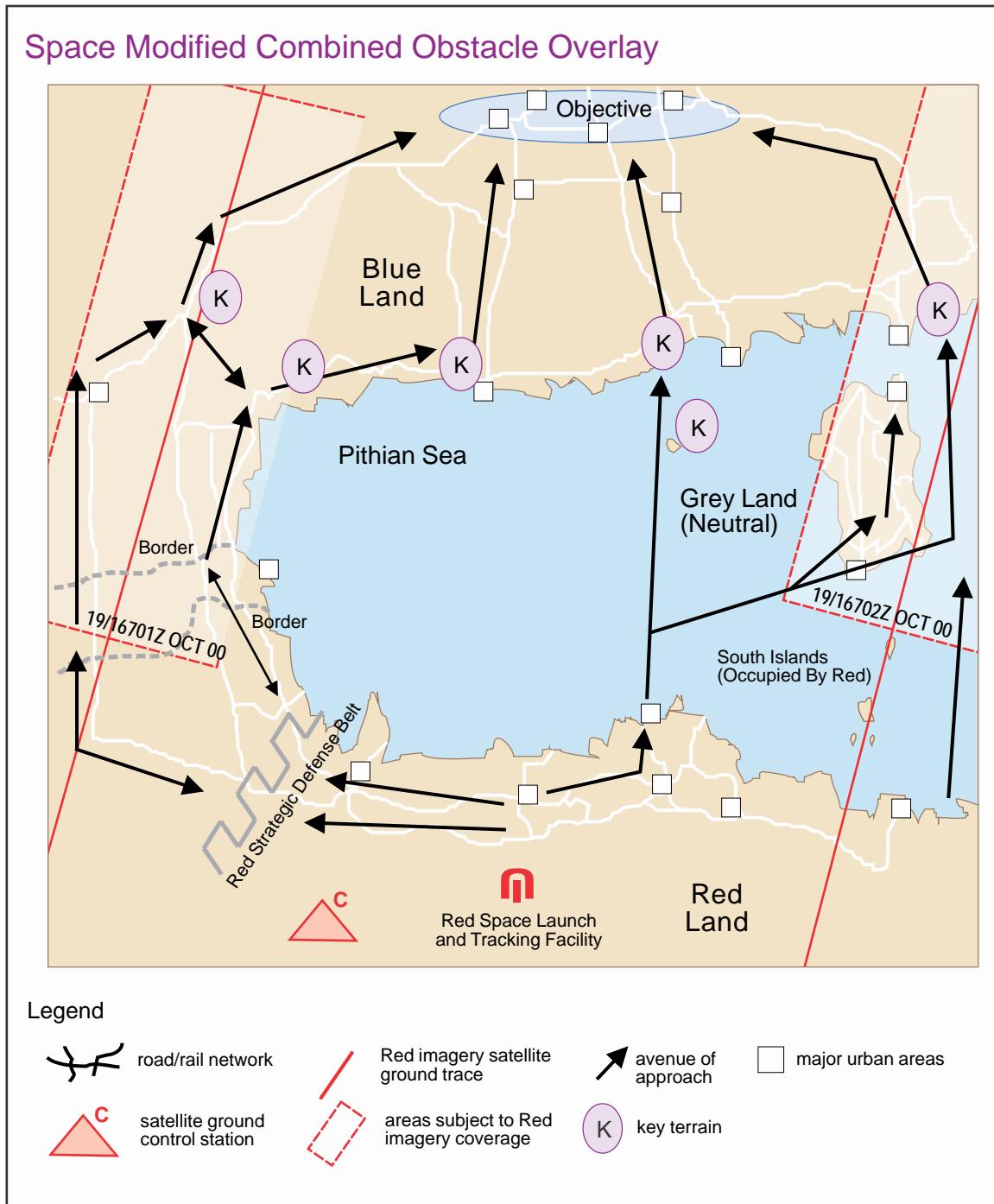
(2) Evaluate the Impact of the Space Domain on Military Operations. Space systems are predictable in that they are placed into the orbits that maximize their

mission capabilities. For example, high-resolution weather satellites are normally placed in low-Earth orbits, while communications and weather satellites that must continuously view a given area are most efficiently operated at very high altitudes in geosynchronous orbits. Likewise, highly elliptical orbits that provide long dwell times over the Northern Hemisphere are useful for communications and other satellites. Additionally, the limited number of space launch facilities in the world, combined with predictable launch windows for specific orbital planes, facilitate the prediction of pending satellite launches. Once a satellite is tracked and its orbit determined, space operations and intelligence crews can usually predict its function and future position (assuming it does not maneuver). The path a satellite makes as it passes directly over portions of the Earth can be predicted and displayed on a map as a satellite ground track, assuming the satellite is not maneuvered. Planners should note that in times of increased tensions, satellite-owning entities may determine it worthwhile to maneuver a satellite to complicate timely tracking by potential adversaries. This predictability allows JIPOE analysts to warn friendly forces about upcoming gaps in friendly space system coverage or mission capabilities (such as changes in global positioning satellite accuracy), as well as upcoming windows of vulnerability to adversary space systems. Conversely, adversary space forces are able to do the same. The predicted ground tracks and surveillance areas of adversary reconnaissance satellites, as well as the locations of space-related infrastructure (e.g., space launch facilities, satellite ground control stations), should be depicted on the space MCOO (see Figure III-7). The JIPOE analyst should use this overlay to identify gaps in the adversary's space-based reconnaissance capabilities.

e. **The Information Environment.** The information environment is the aggregate of individuals, organizations, and systems that collect, process, disseminate, or act on information and includes cyberspace. Both friendly and adversary forces are aware of the significance and reach of IRCs to gain asymmetric advantage in the information environment.

(1) The actors in the information environment include military and civilian leaders, decision makers, individuals, and organizations. Resources include the information itself and the materials and systems employed to collect, analyze, apply, disseminate, and display information and produce information-related products such as reports, orders, and leaflets. Significant characteristics of the information environment can be further evaluated within physical, informational, and cognitive dimensions (see Figure III-8).

(a) **The Physical Dimension.** The physical dimension is composed of C2 systems, key decision makers, and supporting infrastructure that enable individuals and organizations to create effects. It is the dimension where physical platforms and the communications networks that connect them reside. The physical dimension includes, but is not limited to, human beings, C2 facilities, newspapers, books, microwave towers, computer processing units, laptops, smart phones, tablet computers, or any other objects that are subject to empirical measurement. The physical dimension is not confined solely to military or even nation-based systems and processes; it is a diffused network connected across national, economic, and geographical boundaries.

**Figure III-7. Space Modified Combined Obstacle Overlay**

(b) **The Informational Dimension.** The informational dimension encompasses where and how information is collected, processed, stored, disseminated, and protected. It is the dimension where the C2 of military forces is exercised and where the commander's intent is conveyed. Actions in this dimension affect the content and flow of information. The informational dimension is partially shaped by those norms,

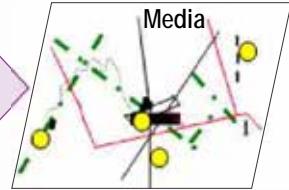
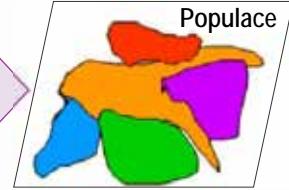
Impact of the Information Environment on Military Operations			
Significant Characteristics	Dimension Lens	Effects on Operations	Template for Each Characteristic
Media	Cognitive	Media is generally positive about friendly military operations.	
	Informational	Media broadcasts reach 74% of populace; reports on crime and social issues.	
	Physical	Available radio infrastructure, but there is limited satellite equipment.	
Populace	Cognitive	Believes that guerrilla forces are criminals, but not willing to overtly support friendly forces.	
	Informational	Rely heavily on word of mouth to exchange information; biggest topics with populace are justice, economics, and safety.	
	Physical	75% Arab, 23% Persian, generally live in major cities — focus efforts in urban environments.	
Communication Structure	Cognitive	Populace has limited confidence in the infrastructure.	
	Informational	Unreliable infrastructure makes communication slow and puts increased reliance on nontechnical information exchange.	
	Physical	Limited ground communications networks; using cellular as replacement.	

Figure III-8. Impact of the Information Environment on Military Operations

rules, policies and processes, and heuristics that guide, inform, and potentially bind decision makers within the OE.

(c) **The Cognitive Dimension.** The cognitive dimension encompasses the minds of those who transmit, receive, and respond to or act on information. It refers to individuals' or groups' information processing, perception, judgment, and decision making. These elements are influenced by many factors, to include individual and cultural beliefs, norms, vulnerabilities, motivations, emotions, experiences, morals, education, mental health, identities, and ideologies. Defining these influencing factors in

a given environment is critical for understanding how to best influence the mindset of the decision maker and create the desired effects. As such, this dimension constitutes the most important component of the information environment. The analysis of the cognitive dimension is a two-step process that identifies and assesses all human characteristics that may have an impact on the behavior of the populace as a whole, the military rank and file, and senior military and civil leaders, and evaluates the influence these human characteristics have on military operations.

1. The Populace. This portion of the JIPOE analysis should consider both civilian and military populations, especially in countries where military institutions may have an adversarial or oppressive relationship with all or portions of the civil populace. The degree to which the attitudes, beliefs, and backgrounds of the military rank and file either reflect or conflict with core values held by the populace as a whole and/or the leadership is extremely important to this analysis. Additional significant factors to consider include population patterns, living conditions, real or perceived historical grievances, national/ethnic/sectarian conflicts and rivalries, languages and dialects, cultural and class distinctions, political attitudes, religious beliefs and laws, education levels, emotional reactions to recent events and changing conditions, information manipulation, and any existing or potential refugee situations. The full cognitive picture should include an understanding of how friendly, neutral, and threat networks view the US and its partners as well as how they view each other. This understanding facilitates COA development that takes into consideration how actions from any of the networks affect each other.

2. The Leadership. Biographical background data on key adversary military and political leaders, both ruling and opposition, should be compiled. This data should include information regarding the leader's ethnic, class, and family background; relationships, education, experience, and training; and core beliefs and values. Character trait data such as a leader's core beliefs and values, perceptual biases, information sources, and decision-making style should be combined with a historical track record of that leader's past decisions. Such information may be used to construct a psychological profile for the leader that may assist in predicting how that leader may respond in a given situation. Depending on the amount of data available, it may be possible to construct a psychological profile for the leadership as a whole, as well as for specific individuals.

(2) Cyberspace. A thorough understanding of cyberspace effects on operations is crucial to understanding the information environment and the OE. Cyberspace is a global domain within the information environment consisting of the interdependent network of information technology infrastructures and resident data, including the Internet, telecommunications networks, computer systems, and embedded processors and controllers. Within cyberspace, electronics and the EMS are used to store, modify, and exchange data via networked systems. Cyberspace can be described in terms of three layers related to JIPOE: physical network, logical network, and cyber-persona.

(a) The physical network layer of cyberspace is comprised of geographical and physical components and is the medium through which data travels. The geographic component is the location in land, air, sea, or space where elements of the network reside.

The physical network component consists of hardware, infrastructure (to include wired and wireless, satellite and optical linkages) and nodes/connections (to include wired/wireless routers, switches, servers, repeaters, and hosts). This layer is a primary target for intelligence to include SIGINT, HUMINT, and open source intelligence, and is a primary layer for GEOINT and targeting.

(b) The logical network layer is the virtual space abstracted from geography that is characterized by data, applications, network communications protocols and topologies that facilitate the creation, storage, transfer, processing, and display of information in and through the physical network layer to network users and operators. The logical layer represents how the network works. The elements within the logical layer are not necessarily related to specific individuals or physical nodes. This layer is also critical from intelligence and targeting standpoints and can be very dynamic in character.

(c) The cyber-persona layer is a higher abstraction of the logical layer that is a digital representation of a user or entity identity in cyberspace. The cyber-persona layer consists of people actually on the network. Some examples of cyber-personas may include email addresses, social networking identities, web forum or chat room aliases, or voice over Internet protocol telephone numbers. A user may have multiple cyber-personas and a cyber-persona may have multiple users. Because cyber-personas may not be tied to a geographic location or physical node, significant intelligence collection and analysis is required to effectively target in this layer of cyberspace.

For additional information, see JP 3-12, Cyberspace Operations.

(3) Evaluate the Impact of the Information Environment on Military Operations. The impact of the information environment should be analyzed to consider how significant characteristics affect friendly, neutral, and adversary capabilities and broad COAs. A thorough understanding of the current state of the information environment, local communications means, methods, trusted sources, key influencers, established cognitive patterns, cultural norms, perspectives, historical narrative, system of opposition, and adversary and HN IRCs is critical to the development of the commander's communication synchronization effort.

(a) Significant characteristics, further analyzed within the physical, informational, and cognitive dimensions, can be graphically represented on a combined information overlay (see Figure III-9). The analyst can use this overlay to identify strengths and/or vulnerabilities of the information environment that can be exploited by friendly or adversary forces. The adversary mindset should be evaluated to determine the probable state of morale in both the civil and military population. Morale is a significant factor not only in assessing the overall capability of a military force, but also in evaluating the extent to which the civil populace will support military operations. The degree of regime loyalty should be assessed not only for the populace but also, if possible, for individual leaders. Depending on the situation, factors such as ethnic, religious, political, or class grievances or differences may be exploitable for military information support operations (MISO) purposes. Psychological profiles on military and

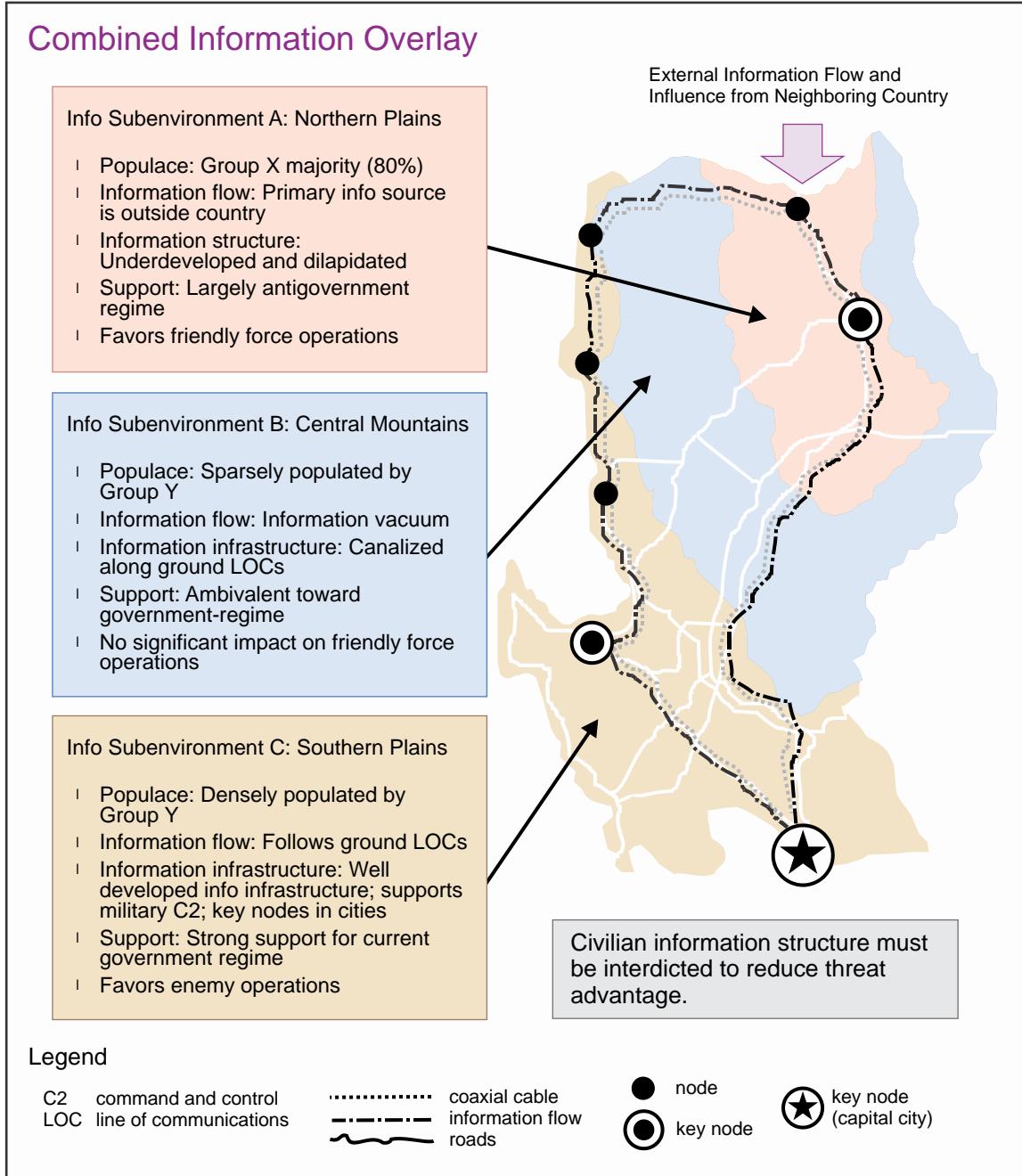


Figure III-9. Combined Information Overlay

political leaders may facilitate understanding an adversary's behavior, evaluating an adversary's vulnerability to deception, and assessing the relative probability of an adversary's adopting various COAs.

(b) The impact of cyberspace should be evaluated by identifying and prioritizing those information systems and networks deemed most critical to the planning and execution of military operations. Depending on the criticality of the system, the effects of data loss or even a short downtime can result in a lingering ripple effect on

Describe the Impact of the Operational Environment—Step 2

military operations that may last days, weeks, or months. The relative vulnerability of each critical system should also be assessed: first, by evaluating the strengths and weaknesses of each of its cyberspace aspects, and second by identifying any backup systems, “work arounds,” or redundant links. Those systems that are assessed to be most important and most vulnerable should be identified as likely targets for cyberspace attack, electronic warfare (EW), or physical attack. This analysis can be graphically portrayed in the form of an information system vulnerability assessment matrix. Figure III-10 is an example of a matrix that assesses the vulnerability of several notional information systems listed in order to determine their overall vulnerability. In the example shown, the INTECH system is more vulnerable to cyberspace attack than the KEYLINK system. The overall vulnerability of a network/system, however, doesn't necessarily determine the criticality of the system or likelihood of an attempted attack. Risk to operations is

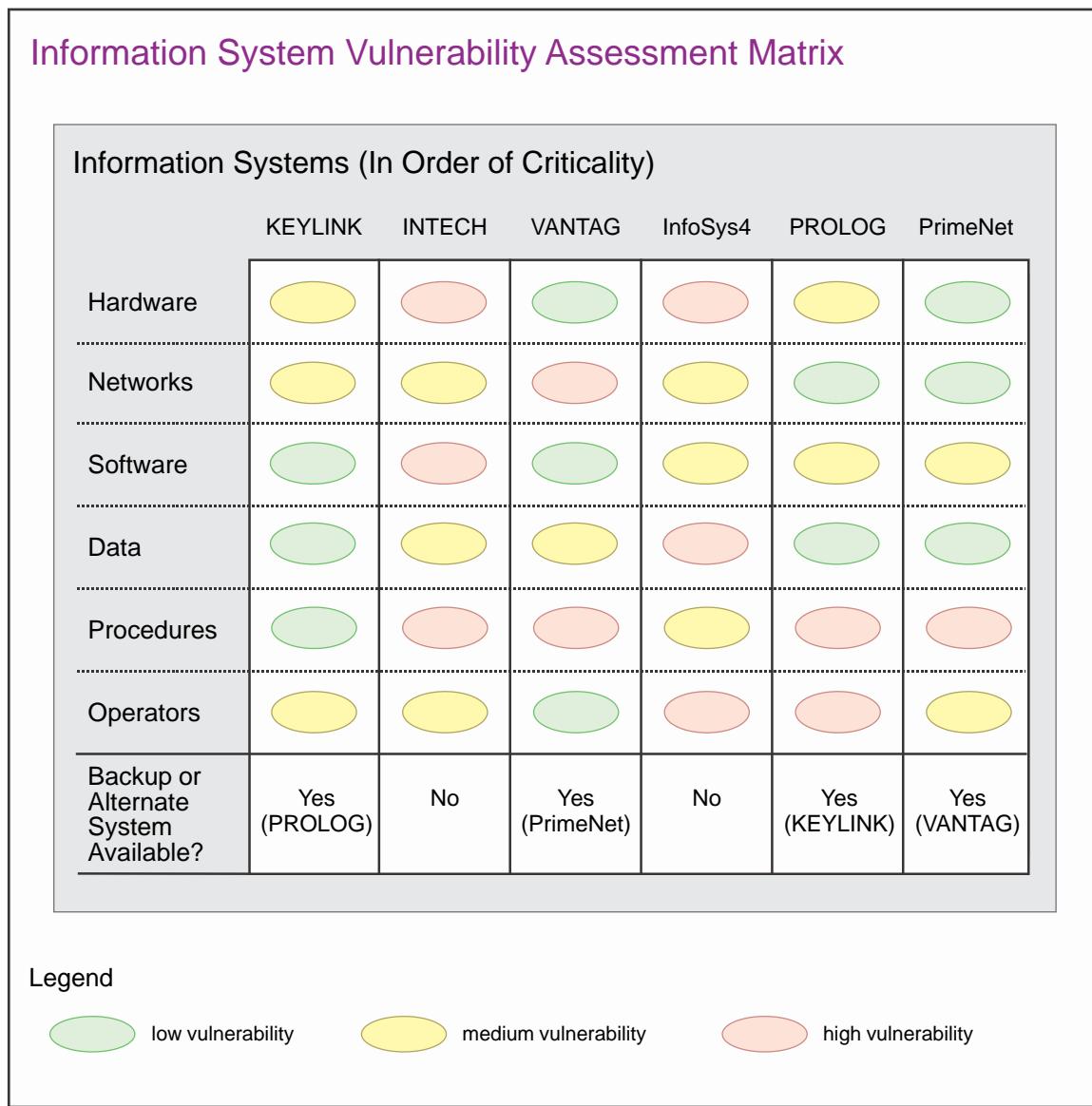


Figure III-10. Information System Vulnerability Assessment Matrix

calculated by analyzing the vulnerability of a network/system, the threat to the system, and the overall impact (criticality) of the network/system.

f. Other Relevant Aspects of the OE. Other aspects include all those characteristics of the OE that could affect friendly or adversary COAs that fall outside the parameters of the categories previously discussed. The following are some additional aspects that should be addressed when evaluating the OE:

(1) **EMS.** The electromagnetic aspect of the OE includes all significant portions of the EMS, to include those frequencies associated with radio, radar, laser, electro-optic, infrared (IR) equipment, and nonlethal directed energy systems. It is a combination of the civil electromagnetic infrastructure; natural phenomena; and adversary, friendly, and neutral electromagnetic OB. The EMS provides the operating medium for communications; electro-optic, radar, and IR imagery; SIGINT; measurement and signature intelligence; and EW operations. Use of the EMS for military or civilian purposes is constrained by a variety of factors, ranging from international agreements on frequency usage to the physical characteristics of electromagnetic waves. In order to evaluate how the EMS will affect military operations in a specific geographic area, the JIPOE analyst should consider such factors as the following:

(a) **Military Use of the IR Band.** Depending on their temperatures, objects emit varying amounts of electromagnetic energy in the IR band. Analysis of the OE for use of the IR spectrum should include identification of factors such as optimal collection times, normal periods of thermal crossover, the prevalence of cloud cover, haze, or significant atmospheric dust levels, and the background levels of radiant IR energy. The JIPOE analyst should consider how these factors affect friendly intelligence collection and operations (night vision, IR guided munitions) as well as their effects on adversary assets. In addition, IR imagery from space-based or airborne sensors can be used to determine sea surface temperature, ocean current patterns, and to locate ocean fronts and warm and cold core eddies.

(b) **Military Use of Multispectral Imagery (MSI) and Hyperspectral Imagery (HSI).** MSI and HSI permit analysis of spectral profiles to identify militarily significant characteristics of the imaged surface useful in detecting camouflage, concealment, and deception efforts. The JIPOE analyst should be familiar with both friendly and adversary MSI and HSI capabilities and the potential application of this technology to support military operations.

(c) **Military Use of Synthetic Aperture Radar (SAR).** Unlike MSI or IR sensors, SAR is an active space-based or airborne sensor. It operates by emitting energy to the Earth, then measuring the energy as it is returned to the sensor. SAR imagery can be very useful for military purposes from tracking moving targets such as vehicles or boats against background clutter, to tracking oceanographic features like waves. These sensors are not affected by cloud cover or periods of darkness. The JIPOE analyst should be familiar with both friendly and adversary SAR capabilities and the potential application of this technology to support military operations.

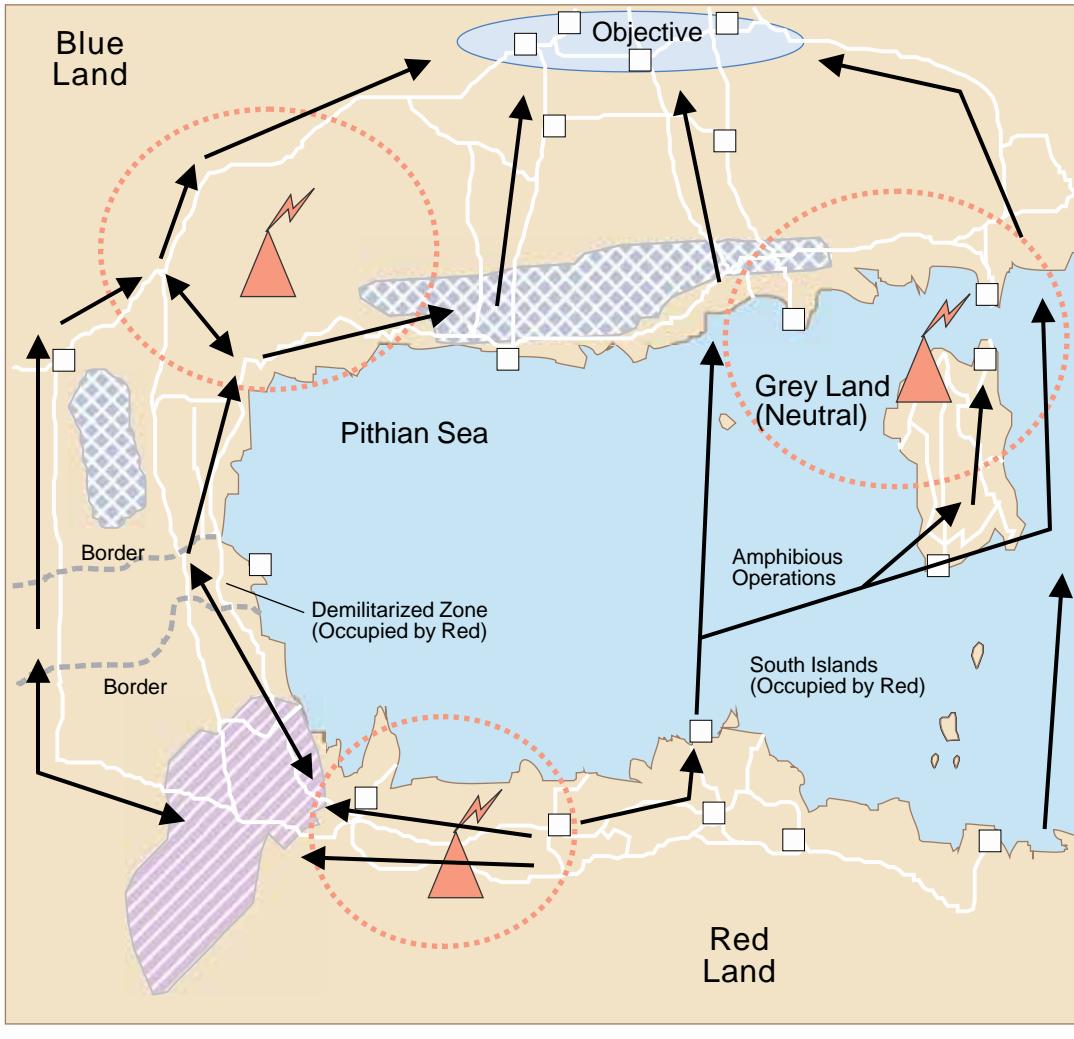
(d) **Radio Wave Attenuation.** Surface characteristics greatly affect the quality of communications and the communication distance obtainable using ground waves (radio waves propagated parallel to the Earth's surface). The surface over which the ground wave travels must have good conductive characteristics in order to prevent the wave from attenuating so much that it becomes unusable for communications. For example, seawater is a relatively good conductor, while jungle terrain may weaken the ground wave to the point that it is unusable for communications. The amount of water vapor or precipitation present in the air is an additional factor capable of degrading wave propagation. Additional power sources or relay sites may be required to boost the signal strength of ground waves in areas with poor surface or weather characteristics. Areas where surface characteristics may pose significant wave attenuation problems should be identified and displayed on a MCOO for the electromagnetic environment (see Figure III-11).

(e) **Skip Zones and Skip Distances.** Sky waves are bounced off the ionosphere to extend communications up to 2,500 miles per “hop.” A skip zone is essentially a communications “deadspace” between the transmitter and point where the sky wave returns to Earth. The size of the skip zone is related to the frequency of the sky wave, the take-off angle, and the constantly changing characteristics of the ionosphere. In general, lower frequencies bounce off the ionosphere at lower altitudes than higher frequencies, and therefore return to Earth a shorter distance from the transmitter. Factors that influence the ionosphere include the time of day, the season, solar flares, geomagnetic storms, and nuclear detonations.

(f) **Interference.** Radio interference can result from natural or man-made causes. For example, in the tropics where thunderstorms are prevalent, low-frequency ground wave communications may be unreliable, requiring greater reliance on the higher frequencies of sky waves. Conversely, in the polar regions where thunderstorms are rare, sky waves are seriously disrupted by magnetic disturbances, and military operations may rely more on low-frequency ground wave communications. Man-made interference may be intentional, as in the case of jamming, or the unintentional result of frequency clustering. The JIPOE analyst should construct an interference evaluation chart (see Figure III-12) by identifying all potential sources of interference and plotting their frequency ranges along the EMS. Examples of potential sources of interference may include friendly, adversary, and neutral military and civilian emitters, as well as any weather or geomagnetic disturbances.

(g) **Evaluate the Impact of the Electromagnetic Environment on Military Operations.** The evaluation of the electromagnetic environment is accomplished by the joint frequency management office and joint spectrum management element of the J-6, in accordance with Chairman of the Joint Chiefs of Staff Manual (CJCSM) 3320.01, *Joint Electromagnetic Spectrum Management Operations in the Electromagnetic Operational Environment*. The JIPOE analyst must work closely with J-6 personnel to ensure that this analysis is fully integrated into the overall JIPOE effort and is based on the most up-to-date adversary and third-party information. Depending on actual surface and atmospheric conditions, the electromagnetic environment will, to a greater or lesser degree, facilitate activities such as: the C2 of military forces; EW

Electromagnetic Modified Combined Obstacle Overlay



Legend



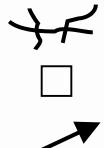
moderate
electromagnetic
attenuation



severe
electromagnetic
attenuation



potential civil
electromagnetic
interference
(radio/TV)



road/rail network



major urban area



avenue of approach

Figure III-11. Electromagnetic Modified Combined Obstacle Overlay

operations; positioning, navigation, and timing (PNT); and intelligence collection. The effects of potential interference, skip zones, radio deadspace, and radio wave attenuation on specific types of military operations should be evaluated. For example, geographic areas or periods of weather that degrade radio communications can hinder an attacking force due to the necessity of displacing transmitters. Conversely, a defending force may be able to shift to alternate communications such as landlines.

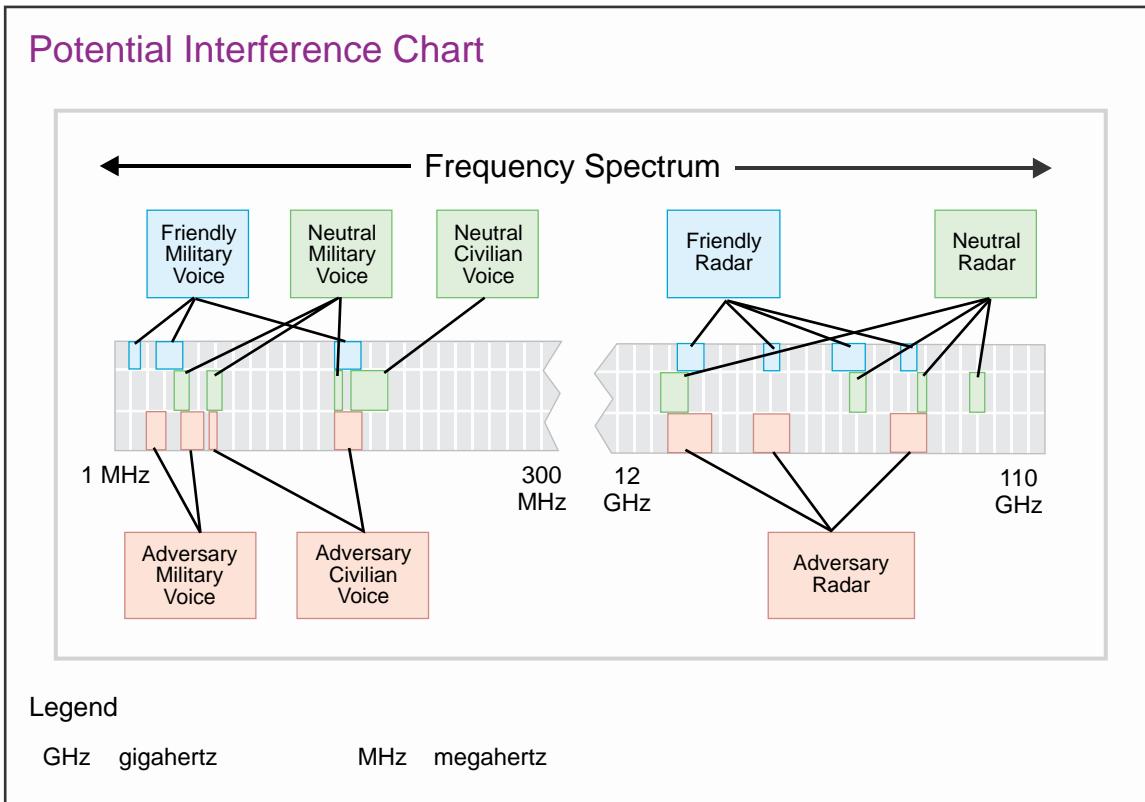


Figure III-12. Potential Interference Chart

(2) **METOC Conditions.** The term METOC is used to convey all meteorological, oceanographic and space environmental factors including the entire range of atmospheric (weather) and oceanographic phenomena, from the sub-bottom of the Earth's oceans up to the top of the atmosphere and space environment (space weather). METOC includes not only conditions at a given point in time, but also long-term climatic averages of conditions and hazards to operations such as icing, turbulence, and thunderstorms. The atmospheric and/or oceanographic environments can interact with, and thereby modify, the characteristics of each physical domain and METOC can have a direct effect on military operations throughout the OE. METOC personnel ensure the integration of METOC information into planning and decision-making processes to enable the JFC and assigned forces to optimize the employment of military capabilities (weapons, sensors, platforms, mission profiles, TTP, and personnel) while marginalizing the benefit of the environment for the adversary, thereby creating an asymmetrical advantage for friendly forces. Effective integration of METOC information aids the planning of joint military operations and enables commanders to anticipate and then mitigate or exploit environmental impacts on planned operations. Examples of some METOC parameters and how they impact joint military operations include:

(a) **Visibility.** Visibility is largely a result of various weather conditions. For example, atmospheric obstructions to transmission of the various spectra affect the atmospheric path of those wavelengths. Moisture in the form of fog or clouds affects visible light wavelengths; while high absolute humidity (another measure of moisture) degrades IR wavelength transmissivity and sensors that operate in the IR spectrum.

Atmospheric aerosols (particulates such as smoke, dust, or haze) can also affect transmissivity: offensive smoke operations, using specifically sized particulates, are designed to degrade sensors. Obviously, target visibility can be affected by available light, but ambient light is a function of atmospheric transmissivity and obstructions (clouds shielding moonlight) as well as terrain obstructions (mountains creating shadows to the rising/setting moon) or causing an earlier/later onset of twilight, depending on the physical environment's geometry. Other major factors include the rising, setting, and phases of the moon (thin high cirrus cloud cover actually enhances nighttime ambient light), as well as the times associated with the begin morning nautical twilight/begin morning civil twilight, sunrise, sunset, and end of evening nautical twilight/end evening civil twilight. Low visibility is beneficial to offensive and retrograde ground operations. In the offense, it conceals the concentration and movement of military forces, thus enhancing the possibility of achieving surprise. Conversely, low visibility hinders the defense because cohesion and control become difficult to maintain, and reconnaissance, surveillance, and target acquisition are degraded. Air operations are typically adversely affected by poor visibility. The exceptions to this are those missions that are not dependent upon visual references.

(b) **Winds.** Winds of sufficient speed can reduce the combat effectiveness of a force downwind as the result of blowing dust, smoke, sand, or precipitation. The upwind force usually has better visibility. CBRN operations also usually favor the upwind force. Once an area is contaminated, wind changes such as shifts and shears can cause areas previously free of contamination to quickly become hazardous. Structures can form into barriers that keep agents in place as well as form channels that create new and unique agent spread patterns. Strong winds and wind turbulence, especially those caused by funneling or channeling through terrain features or other obstacles, such as those features in today's urban environments, can limit aircraft performance as well as airborne and theater missile force operations. The evaluation of weather in support of air operations requires information on the wind at the surface as well as at varying altitudes. High winds near the ground increase turbulence, may inhibit aircraft maneuvering, and can prevent air mobility forces from conducting airdrop or landing operations. High winds at greater altitudes can increase or reduce aircraft fuel consumption, potentially limiting aircraft range or loiter time. Varying wind directions and speeds in different layers between the surface and aircraft altitude can greatly affect the trajectories of unguided munitions. Wind-blown sand, dust, rain, or snow can reduce the effectiveness of radars and communications systems. Strong winds can also hamper the efficiency of directional antenna systems by inducing antenna wobble, or damage/destroy the antenna. On the oceans, winds create swells and waves that can become significant hazards to operations and to logistic efforts. Furthermore, storms (e.g., hurricanes, typhoons, and intense winter storms) affecting ports/harbors and airbases can have disruptive effects on operations by forcing ships and aircraft to sortie to avoid the direct effect of the storm. Winds also have a significant effect on sea surface current variances and pose significant impacts to littoral operations.

(c) **Precipitation.** Precipitation affects visibility and the functioning of many IR and electro-optical sensors, radar, and communications systems, and can reduce the quality of supplies in storage. Heavy rain causes flash flooding in mountainous

terrain and generalized flooding over broad areas that may significantly affect surface transportation. When rain falls into snowpack, it hastens melting and avalanche/flooding potential. Heavy snow cover can reduce the efficiency of many communications systems as well as degrade the accuracy and effects of many types of munitions. Freezing rain and accumulating ice cause significant impacts on surface transportation, including roads and maritime/port operations, and severely affect aircraft operations both in flight and on the ground. Depending on the commander's mission focus, flooding rains (or long-term lack of rain) in agricultural areas can be a significant factor in CMO. Where a commander is responsible for city infrastructure functions, rain and flooding can present serious challenges to water treatment/sanitation and result in medical issues.

(d) **Cloud Cover.** Heavy cloud cover can degrade the effectiveness of many target acquisition and surveillance systems by concealing military forces and by reducing the solar heating of some targets. Cloud cover can therefore reduce the effectiveness of IR-guided munitions. Low ceilings can prevent aircraft from taking off, landing, conducting low-level missions, employing weapons, or conducting airdrops.

(e) **Temperature and Humidity.** Extremes of temperature and humidity have debilitating effects on personnel and reduce equipment capabilities. Personnel wearing CBRN individual protective equipment have an additional thermal load that may accelerate and/or amplify the debilitating effects of temperature extremes. Temperatures degrade the use of thermal target acquisition systems when the target and the background temperatures are nearly equal or have reached "thermal crossover." The length of crossover time depends on air temperature, background characteristics such as soil and vegetation types, or building construction and geometry to the sun, amount of cloud cover, and other factors. High humidity also affects IR transmissivity, degrading acquisition range. Other examples of temperature effects include degrading airlift capability at high altitude (decreased density altitude); and limiting capability of military working dogs because of near-surface atmospheric instability which causes the animal to lose scents. Variations in temperature and humidity in the vertical dimension, i.e., through the lowest several thousand feet of the atmosphere, affect electromagnetic propagation and can degrade radar signals, creating gaps in vertical coverage. Temperature extremes may restrict or prevent the operation of aircraft, unmanned aircraft, or other weapon systems containing sensitive components.

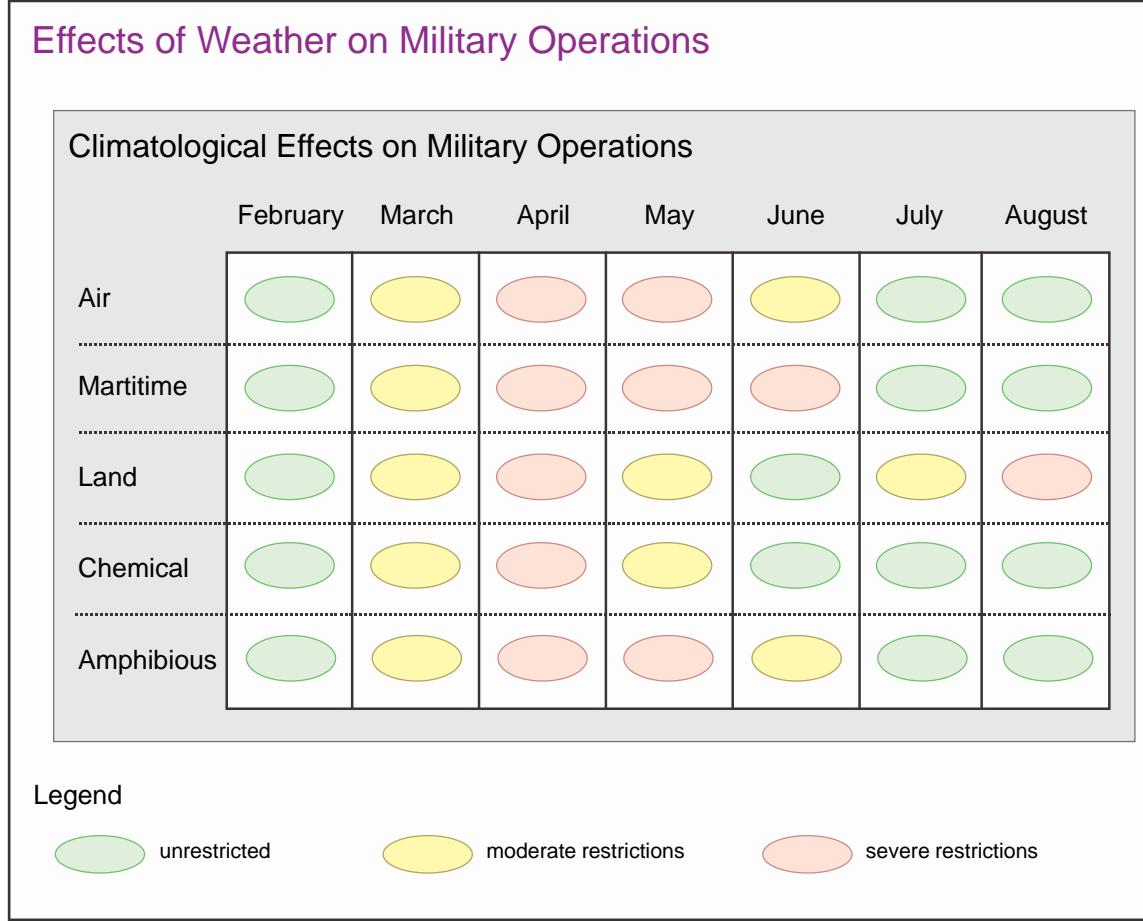
(f) **Evaluate the Impact of METOC on Military Operations.** Depending on actual METOC conditions, the METOC parameters such as those examples discussed above will have an impact, for better or worse, on various types of friendly, neutral, and adversary military operations, weapons systems, and personnel. METOC personnel transform METOC information into actionable decision aids and mission planning/execution forecast products. One common method is to assess favorable, marginal, or unfavorable effects by assessing METOC parameter thresholds specific to a mission, platform, or system. For example, it may be determined that visibilities less than one mile are unfavorable to airborne operations, temperatures of 95 to 110 degrees Fahrenheit marginally degrade offensive ground operations, or ceilings less than 200 feet may prevent air operations. The effects of METOC can then be summarized in a matrix similar to the example provided in Figure III-13.

For further information on the effects of weather and climate on military operations, see JP 3-59, Meteorological and Oceanographic Operations. For more information on how temperature and humidity affect CBRN hazards, see JP 3-11, Operations in Chemical, Biological, Radiological, and Nuclear Environments.

(3) **Time.** Time is a significant consideration in military operations. Analyzing it as an aspect of the OE focuses on how an operation's duration might help or hinder each side. This has implications at every planning level.

(a) The decision and reaction time of an adversary is a crucial factor and will directly impact the resources an adversary can bring to bear in a given situation. For example, a friendly operation, if planned and executed relatively quickly, may constrain the adversary's ability to reinforce or redeploy military units in time to counter the operation. In this scenario, the adversary's potential COAs would be considerably more limited than if the same operation was preceded by a lengthy period of friendly preparations.

(b) Adversaries with limited military capability usually view protracted conflict as advantageous to them. They avoid battles and only engage when conditions are overwhelmingly in their favor. This is a strategy of exhaustion, which remains



effective today. The adversary concentrates on surviving and inflicting casualties over time. Although the military balance may not change, this creates opportunities to affect the way domestic and international audiences view the conflict. Conversely, an adversary may attempt to mass effects and achieve decisive results in a short period.

(c) The duration and timing of operations affects people's perceptions of operational and strategic effectiveness—both in the operational area and domestically. An operation's duration may affect operational flexibility and popular support for protracted military operations may diminish if results are not evident. Operation and campaign plans that commit joint forces earlier than anticipated and that enable rapid progress toward the strategic end state use time to the advantage of joint forces. Time is both an operational planning factor and a tool to manipulate tactical and strategic advantages.

(d) Adversaries seek to control the tempo and initiative by inflicting casualties and conducting information activities to influence US political leaders, the US population, and US relationships with multinational partners. Joint forces must actively engage in the information environment to mitigate the effects of such actions and decrease adversary capabilities. In operations predominated by stability tasks, long-term objectives and relationships are critical to operational and mission success.

(e) The perception and experience of time are among the most central aspects of how groups function and interact. When people experience time differently, tremendous communication and relationship problems typically emerge. Cultural awareness includes sensitivity to how cultures in the operational area perceive time.

3. Develop a Systems Perspective of the Operational Environment

a. **Overview.** An understanding of the OE's systems and their relationships and interdependencies can help JFCs and their staffs visualize and describe how military actions can affect other agency and multinational partners as well as how those partners' actions can affect the JFC's operations. Visualizing and describing the interaction of PMESII systems and subsystems can facilitate the JFC's collaboration with counterparts from other agencies and organizations and help influence actions that are beyond the JFC's direct authority. The development of a systems perspective of the OE typically will require cross-functional participation by other joint force staff elements and collaboration with various intelligence organizations, other USG departments and agencies, and nongovernmental centers of excellence. The J-2 must consider the best way to manage this cross-functional effort. Organizations such as the JIPOE coordination cell, DFE, and JTF JIOC (when formed), are particularly useful to coordinate actions and obtain external joint and national-level support for the development and maintenance of a comprehensive systems perspective. As Figure III-14 depicts, this perspective helps the JFC and staff visualize potential or actual strengths, weaknesses, key nodes, COGs, and other factors that affect the development and analysis of COAs and eventual approval of a CONOPS. A systems perspective is based on a node-link analysis of the PMESII systems associated with the adversary and other relevant actors.

b. The Adversary and Other Relevant Actors. The development of a systems perspective requires the identification and analysis of all relevant actors, to include their relationships and interdependencies. The relevance of actors is determined by identifying individual or group behavior and capabilities that could potentially impact (positively or negatively) the joint operation. In addition to the adversary, some examples of relevant actors may include, but are not limited to, the HN government and population, allies, international state and non-state actors, the NGO community, and civil society organizations.

(1) The Adversary. In most joint operations there will be an identifiable adversary which will be the primary focus of the JIPOE effort. An understanding of the adversary and how it interrelates with other actors helps analysts and planners progress

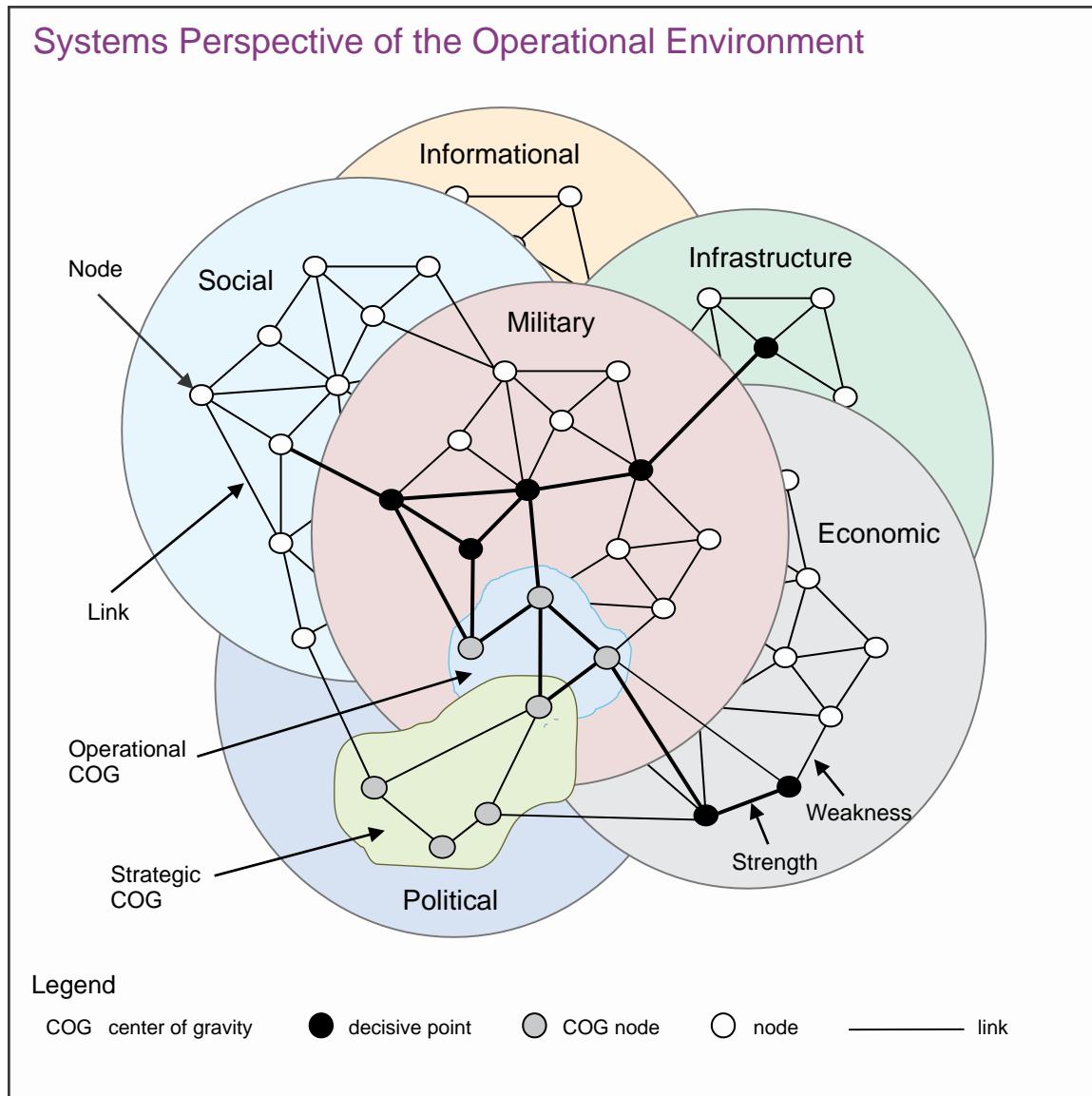


Figure III-14. Systems Perspective of the Operational Environment

from a broad understanding of the OE to an accurate system network analysis. In developing a systems perspective, some factors relevant to the adversary may include:

- (a) Who the individuals and groups are that make up the adversary;
- (b) Origins and evolution of the adversary over time;
- (c) Organization and internal decision-making structures;
- (d) Extent of fractionalization and internally competing entities;
- (e) Relations with the population and civil society;
- (f) Relations with key local or transnational business interests/economic sectors;
- (g) Recruiting and resource/logistics base;
- (h) Relations with various HN government entities (if adversary is a non-state actor) and nongovernmental institutions;
- (i) Relations with other states in the region;
- (j) Relations with other local and transnational non-state actors (such as criminal groups, diaspora communities, terrorist networks, and global religious authorities);
- (k) Variation in these characteristics across different factions and/or regions.

(2) **The HN Government.** The HN government is always a relevant actor in an operation and may serve as a reliable and/or unreliable partner at different stages of a conflict. In some situations, the shortcomings of the HN government are either partially or entirely responsible for the conflict itself. Enhanced understanding of the factors that impact the decision-cycle of the HN government enables the JFC to predict, respond to, and/or shape the HN government's likely behavior with regard to the operational desired end state. Factors that may be helpful in constructing a systems perspective relevant to the HN government include:

- (a) Nature of the government (such as authoritarian, democratic, confessional, theocratic, monarchy, or oligarchy);
- (b) Perceptions, interests, values, and motivations;
- (c) Sources of legitimacy;
- (d) Economic base and systems for revenue collection and distribution;

- (e) Structure, roles, and political interests of different institutions and levels of government;
- (f) Selection process/criteria for leadership;
- (g) Formal processes for making, enforcing, and reforming laws and policies;
- (h) Relationship between political, security, and judicial institutions;
- (i) Factions/divisions among the political elite and within civil service institutions;
- (j) Origins, ideologies, and aspirations of political parties;
- (k) Roles, capacity, and politics of the justice system;
- (l) Structure and culture of the security forces (military, police, paramilitaries, prisons);
- (m) Civil-military relations;
- (n) Relations with different components of the HN society (such as ethno-cultural groups and interest groups);
- (o) Mechanisms for popular consultation (including elections, shuras, town halls, and audiences with local officials);
- (p) Relations with transnational actors (such as corporations and diaspora networks).

(3) The Population. Different populations are often relevant actors in an operation. JIPOE analysts should determine which populations are relevant and why. To understand the population, it is important to understand the range of factors that shape its perceptions and behavior, including the relationships between those factors (i.e., the interdependence between geographic, demographic, social, cultural, political, economic, and institutional aspects of the population). Characteristics that analysts may identify as having an influence on the relationships, decision-making process, and associated behavior of relevant populations include:

- (a) The people and groups that make up the relevant populations;
- (b) Perceptions, interests, values, and motivations;
- (c) Population security;
- (d) Demographics;
- (e) Geography;

- (f) Politically relevant identities and communities that may be based on ethnicity, class/caste, tribe/clan, religion/sect, geographic region, education, ideology, or profession;
- (g) Economy, employment, and sources of income;
- (h) Methods of communication;
- (i) The identity and selection criteria for political and social elites at local, provincial, and national levels;
- (j) Connections with diaspora communities;
- (k) Relations with/perceptions of the adversary, especially as they relate to the interests of specific communities;
- (l) Relations with/perceptions of other regional state and non-state actors;
- (m) Relations with the HN government, including variations in social contract/expectations of government across different regions/sectors of society, variations across different HN government institutions (e.g., the judiciary, police, military, internal security services, municipal/district governments, and parliament), level of access/participation in government at various levels, relations between informal or civil society leaders and formal government, and historical and current grievances and attempts to resolve them.

(4) Regional and Global Non-State Actors. The presence of transnational non-state armed groups that threaten US interests, such as international terrorist or transnational organized crime groups, is a significant but complex consideration. Where terrorist groups are present, analysts must carefully assess their relationship to the adversary and local communities. Large-scale intervention by foreign or HN government forces may provoke a backlash from local people who are alienated by an increased government presence. Approaches that conflate the transnational threat with the local adversary and local communities can drive them together, internationalizing the conflict and providing extremists from outside the affected country a foothold to exploit. Other potentially significant categories of transnational non-state actors that could influence the dynamics of the conflict include:

- (a) Diaspora networks, which may back or partner with the adversary;
- (b) Transnational corporations, whose activities may be a source of stability or instability;
- (c) Transnational financial institutions, ranging from modern banks to informal networks that can play a key role in interdicting material support for adversary groups.

(5) **Regional State Actors.** Regional state actors can be pivotal to the dynamics and outcomes of a joint operation. If supporting the adversary, they can provide critical access to sanctuary areas and resupply, as well as a scale and scope of resources otherwise typically unavailable to non-state armed groups. Conversely, regional state actors allied with the joint force can coordinate the control of borders, cut adversary logistic networks, interdict illicit activities, and counter the exploitation of border areas as sanctuaries.

(6) **IGOs.** IGOs, formed when two or more national governments sign a multilateral treaty to form such a body and finance its operations and possess legal personality in international law. Most IGOs are regionally focused, and when IGO member states could be adversely affected by a conflict in their region, the organization may act collectively to deny legitimacy, sanctuary, and support to an adversary. IGOs can act as important facilitators for cooperation among states, pressure the HN government to make difficult but necessary political reforms, impose sanctions on the adversary and their supporters, and in some cases muster and deploy multilateral expeditionary civilian and military capacities to support stabilization efforts. IGOs can also play an important role in humanitarian assistance and development.

(7) **NGOs.** NGOs typically fall into three categories: development, humanitarian relief, and US Agency for International Development implementing partners. Local and international NGOs engaged in development work are inherently political, and do not enjoy the same status under the law of war as humanitarian organizations. However, they often attempt to remain neutral in the midst of the conflict, or even engage in grassroots peace-building to create space for their development efforts. As a result, they can have important impacts on the civilian population and the political-economic dynamics of the conflict. Because of their typically long-term presence in the operational area, they often have detailed knowledge of the local population. For nongovernmental humanitarian organizations, coordination groups such as Interaction or the UN Office for Coordinating Humanitarian Affairs can serve as useful liaison elements. Some nongovernmental humanitarian organizations coordinate with military relief activities, but that coordination should be accomplished with due regard for the safety, security, and independence of those organizations. USAID implementing partners can be contractors or grantees. The degree of direct control varies, but their conduct and ability to adapt and cooperate with the JFC depends on the contract that is in place. They are clearly aligned with US, multinational, or HN government interests and may be targeted by the opposition because of this, or extorted by other actors for profit.

(8) **Civil Society Organizations.** Civil society organizations include religious institutions, cultural groups, and local aid societies. Each of these can face retaliation if seen to be assisting the joint force. The activities and relationships of these organizations may have a significant impact on the joint operation and should be considered in the overall systems perspective of the OE.

c. **PMSEII.** The development of a systems perspective should be founded on the identification and analysis of all mission relevant characteristics of adversary and other actors' PMESII systems. Because the relevance of PMESII factors and characteristics

will depend upon the specific situation associated with each mission, there can be no definitive listing of all characteristics appropriate under all circumstances. For example, some of the characteristics that may be considered significant during a sustained humanitarian relief operation may receive slightly less emphasis during combat operations against a conventional adversary. The analysis of an adversary's and other relevant actors' PMESII systems could provide significant indications regarding the circumstances (ideals, goals, territory) that may cause that country to resort to the use of military force or to exercise other policy options. For example, some nations may be willing to use military force to protect international principles such as freedom of navigation, while others may fight only to protect their own national borders. PMESII factors and characteristics can provide important clues as to where a nation may use military force and to what degree. For example, a country will probably make an all-out effort to defend areas it deems politically, culturally, or economically critical, while other less crucial portions of its territory might be used to trade space for time. Additionally, a thorough understanding of the PMESII systems and relationships of all relevant actors in the OE is vital to mission success. The following variables are examples of the types of PMESII factors and characteristics that could be considered by the JIPOE analyst (a more extensive discussion of these factors is contained in Chapter VII, "Special Considerations," and Appendix D, "Analyzing and Depicting a System"):

(1) **Political and Military Characteristics.** Political considerations may include but are not limited to local and regional governments; international relations; foreign alliances; unofficial power centers (gangs, cartels, multinational organizations, and militias); and political or ethnic grievances and affiliations. Military considerations may include but are not limited to: ROE; establishment and location of exclusion zones and no-fly zones; maritime defense zones; territorial waters; excessive maritime claims; and air defense identification zones. However, caution should be exercised when analyzing the impact of military limitations that do not impose actual physical constraints (such as man-made obstacles), and could therefore be highly transitory.

(2) **Economic Characteristics.** Considerations may include but are not limited to the strength/weakness of the adversary's monetary elements (such as currency or electronic transfers); the financial systems (such as banking or informal financial institutions); rate of inflation; key commercial areas; the labor market; laws and regulations impacting business; work permit/visa requirements; and strength of trade unions. Industrial considerations should include bulk fuel storage and transport systems; natural resources; industrial centers; scientific and technological capabilities; nuclear facilities; and toxic industrial material (TIM). Analysts should also consider agricultural factors such as land use patterns; major crops; planting and harvesting seasons; land ownership; availability of commodities and services related to imports/exports; and the food distribution system.

(3) **Social Characteristics.** Considerations may include but are not limited to the cultural impact of past wars and military conflicts; territorial claims and disputes; history of colonial exploitation or foreign interference; ethnic or social strife; geographic or regional patterns of religious affiliation; past and present religious conflicts among population groups; religious peculiarities and sensitivities; and the relationship of religion

to other sources of social affiliation (e.g., ethnicity, economic class, political ideology, family clans, sects, tribes). The health of the population should also be considered and should include determining the presence of communicable diseases; TIM hazards; locations of epidemics; methods of disease transmission; and the location, type, and extent of environmental pollution (radiation, oil spills, and contamination of drinking water).

(4) **Information Characteristics.** Considerations should focus on the sources and means through which information reaches the general population in the AOI. These may include official sources such as government controlled news media; unofficial sources such as local independent news media; unauthorized internal sources such as underground radio and newspapers; and third-party sources such as the international press and various social media outlets. Analysts should also focus on the means by which information is disseminated to, and shared within, the adversary's leadership structure. The credibility of various media and information sources, as perceived by the groups involved, is critical.

(5) **Infrastructure Characteristics.** Considerations may include but are not limited to sources of potable water; transportation means and systems (road and rail networks, canals, and waterways); communications nodes; power production facilities and transmission grids; pipelines; and medical treatment facilities. It is important to assess not only the current state of the adversary's infrastructure, but also the impact of projected military operations on infrastructure that may be critical to post-combat recovery.

d. **Methodology.** A system is an interconnected or interrelated network, group, or chain—a functionally, physically, and/or behaviorally related group of regularly interacting or interdependent elements that forms a unified whole. JIPOE analysts develop a systems perspective of the OE through the identification and analysis of all major elements within friendly, adversary, neutral, or other actor PMESII systems and subsystems that are potentially relevant to the success of a joint operation. Based on understanding strategic objectives, the joint force's mission, and the JFC's intent, objectives, conditions required to achieve objectives, and accomplish tasks, the J-2 identifies PMESII systems and their subordinate components that are relevant to the mission and operation. Understanding the interaction of these systems with each other and how their relationships and interdependencies change over time can help the JFC visualize how joint force actions on one system can affect other systems. A variety of restraints, including available planning time and staff resources, will affect the detail of this analysis.

(1) A system consists of interconnected nodes and links. Nodes represent the elements within a system that can be targeted for action, such as people, organizations, governments, facilities, rights-of-way, virtual locations, companies, natural resources, knowledge, municipalities, software, equipment, or law. Links are the technical, human/social, functional, organization, and thought/intent relationships between nodes, such as the command or supervisory arrangements that connect a superior to a subordinate; the relationship of a vehicle to a fuel source; and the ideology that connects

a propagandist to a group of terrorists. Links help the JFC and staff visualize how various systems work internally and interact with each other. They establish the relationships and interdependencies between nodes that allow them to work together as a system—to behave in a specific way (accomplish a task or perform a function). Both nodes and links are symbolic representations meant to simplify the complexity of the real world, and are useful in identifying COGs and other things the JFC may wish to influence or change during an operation.

(2) Figure III-15 shows a simple example of nodes and links in an adversary's military system. The air defense system (a node in the military system) and its radars and missiles (nodes in the air defense system) are linked to each other and to the maneuver divisions and corps headquarters by their role and ability to protect these nodes from air attack. If the system's radars are vulnerable to friendly antiradiation missiles, then using this advantage to attack and destroy the air defense radars eliminates the electromagnetic relationship (link) between the radars and air defense missile, degrading the air defense system's ability to function effectively. This reduces the level of air defense protection for the maneuver divisions and makes them more susceptible to friendly forces' attack. In other words, it could be unnecessary to attack all nodes in the air defense system in order to degrade its primary function. In this example, JIPOE analysts designate the air

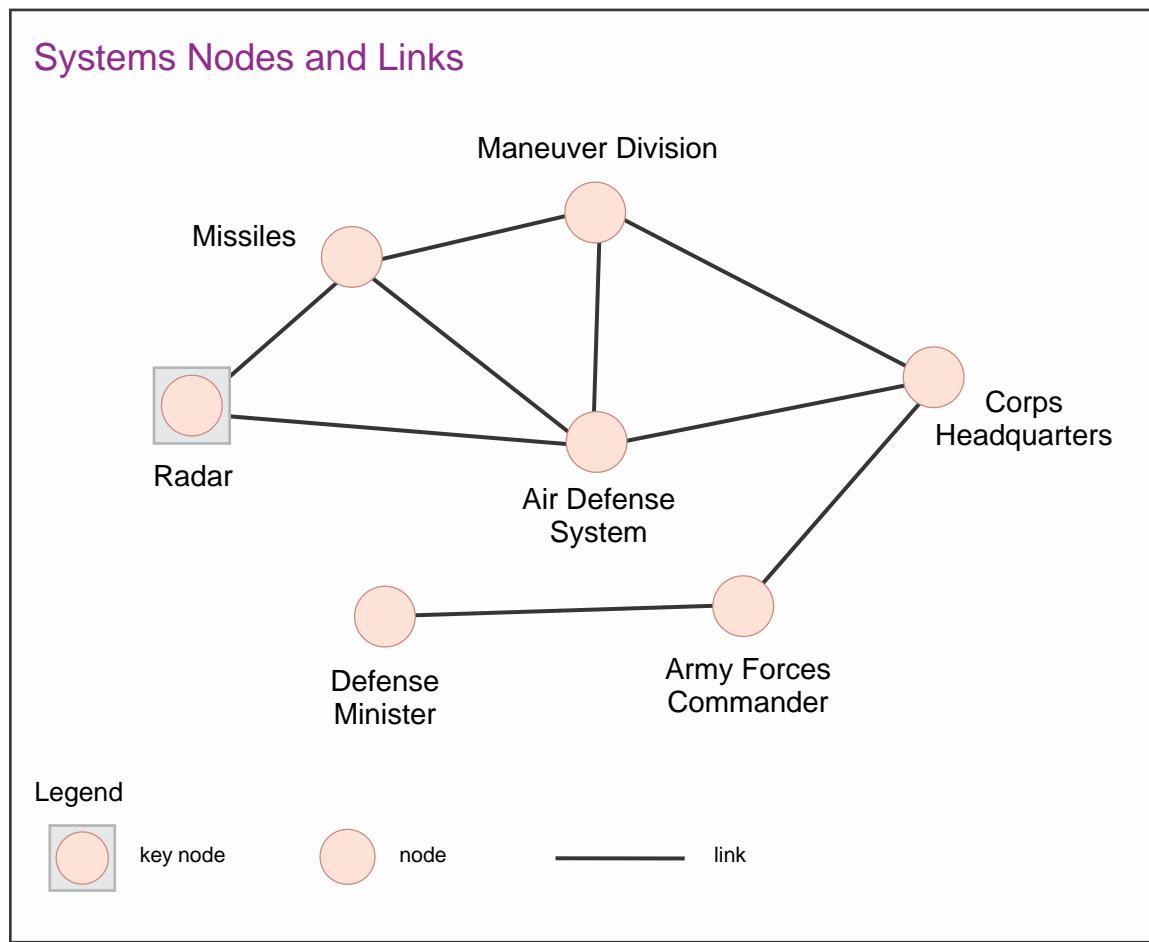


Figure III-15. Systems Nodes and Links

defense radars as a key node—a node that is critical to the functioning of the air defense system.

(3) Due to the complexity of graphically depicting an adversary's myriad PMESII nodes and links, JIPOE analysts will need to make maximum use of automated analytic tools. The following discussion describes the process for a network analysis to identify relevant nodes, determine and analyze links between nodes, identify key nodes, and evaluate the impact of PMESII variables on military operations:

e. **Identify Relevant Nodes.** Analysis of all possible nodes and links in the OE would be an insurmountable task. However, not all nodes and links are relevant to the JFC's mission. JIPOE analysts should develop their understanding in sufficient detail to identify relevant systems, subsystems, nodes, and potential key nodes. The identification of relevant nodes should be based on the evaluation of a variety of characteristics (including those already discussed in paragraph 2, "Develop a Geospatial Perspective of the Operational Environment") combined with an understanding of friendly strategic objectives, the joint force's mission, and the JFC's intent, objectives, conditions required to achieve objectives, and tasks.

(1) The following examples illustrate types of nodes that could be relevant to joint operations. At the lowest level, nodes are discrete persons, places, or things—such as a country's leader, an ammunition supply point, or a rocket launcher—that typically are not divided into subordinate parts. However, whether something is considered a node or a system typically depends on the perspective at a particular level of command. The CCDR might think of the air defense system in Figure III-15 as a single node in the military's system, while the operational-level JFC and component commanders would think of it as a system composed of subordinate nodes (missiles, radars, etc.).

(a) **Sample Political Nodes:** advisors, governors, mayors, political interest groups, cabinet officials, courts, policy documents.

(b) **Sample Military Nodes:** individual leaders at all levels, plans and orders, defense ministry, C2 headquarters, air defense system, artillery maintenance facility, ammunition storage point, key terrain.

(c) **Sample Economic Nodes:** banks, corporations, trade unions, market places, shipping facilities, smugglers, commercial depots.

(d) **Sample Social Nodes:** ethnic groups, clans, tribes, religious groups, unions, associations, schools, cultural centers, health and welfare facilities.

(e) **Sample Infrastructure Nodes:** nuclear power plants, hydroelectric dams, gas pipelines, aqueducts, pumping stations, rail yards, airports, port facilities, relevant factories, hospitals, schools, civil defense shelters.

(f) **Sample Information Nodes:** plans and orders, newspapers, newsletters, information ministry, television networks, computer networks, information technology centers, intelligence agencies, postal facilities, radio stations, national or influential

specialty magazines or periodicals, social media/Internet outlets, and other existing information infrastructure and mass communication capabilities.

(2) Related functional groupings of nodes and links have both horizontal and vertical aspects. Their relevance often depends on the required scale (breadth and depth) of the analysis as determined by the JFC's needs and the level at which the JFC operates. For example, Figure III-16 shows nodes and links in the OE that the CCDR, subordinate JFC, and Service component commanders might focus on relevant to their specific objectives, assigned tasks, and the higher commander's intent. The CCDR's OE in a specific operation can encompass an entire geographic region composed of many nation states. Thus, the CCMD's systems network analysis would focus on upper-level aspects of the specific systems relevant to the CCDR's strategic objectives and missions (the top tier in Figure III-16) and "drill down" to more detailed aspects of these systems as required. For example, from the CCDR's perspective an enemy armored corps could be a single node in the adversary's military system. But to the operational-level JFC and component commanders, the corps likely would be a separate system composed of

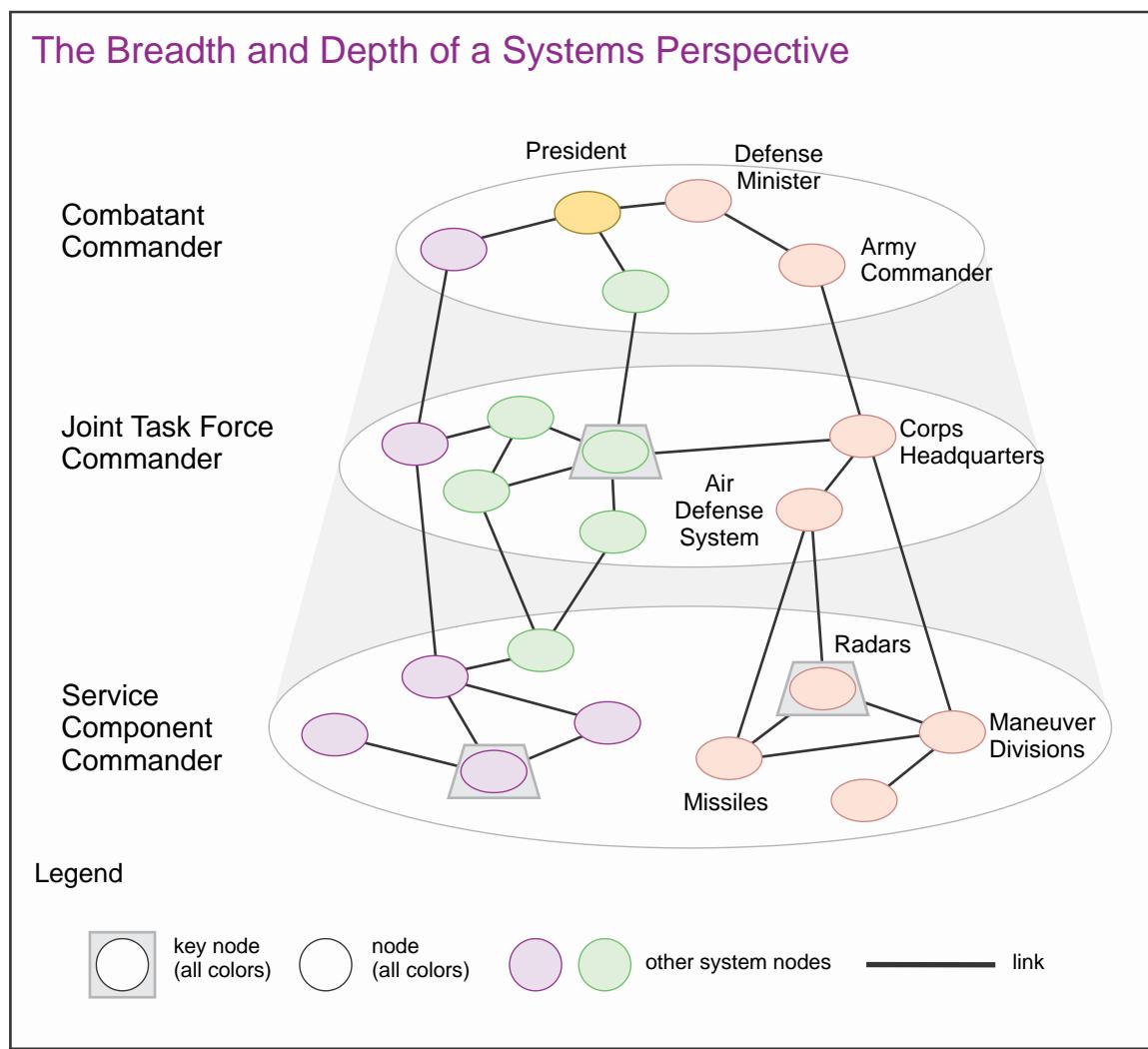


Figure III-16. The Breadth and Depth of a Systems Perspective

operational- and tactical-level nodes and links representing maneuver units, C2 headquarters, and various supporting capabilities for air defense, indirect fire support, and logistics.

(3) **All systems in the OE can be complex.** For example, a typical social system consists of numerous subsystems, each having additional subordinate layers. There can be hundreds of nodes and links at different levels that compose the entire social system. However, many or all of these nodes and links might not be relevant to strategic objectives and the JFC's mission. For example, the J-2 might determine that a small-scale, focused operation such as evacuation of US citizens from an embassy will have little impact on a nation's and region's systems. But large-scale US and multinational military operations in a country will affect all major systems to a greater or lesser degree, and the impact likely will extend across the broader region as well. JIPOE analysts must identify likely undesired effects of large-scale military operations on these systems, such as the impact on the welfare, attitudes, and behavior of the population. While undesired effects might not jeopardize the JFC's accomplishment of near-term tasks and objectives, they could have long-term unintended consequences associated with the region's or country's attitude toward the US, the GCC's theater campaign plan, USG strategic themes and messages, and the USG's strategic end state. The JFC and planners must consider these potential undesired effects during COA comparison and selection. Appendix D, "Analyzing and Depicting a System," provides generic examples of the major systems and possible subsystems.

f. **Determine and Analyze Node-Link Relationships.** Links depict relationships and interdependencies among nodes and are derived from collected data or extrapolations based on collected data. A benefit of graphically portraying node-link relationships (in as much detail as time and resources permit) is that the potential impact of actions against certain nodes can become more evident. For example, the number of links between a node and other nodes can indicate the importance of the node to the larger functional grouping. The strength or intensity of a single link also could be relevant to determining the importance of the functional relationship between nodes and the overall significance to the larger system. Therefore, both the number and strength of links to a node or set of nodes can be indicators of key nodes and a potential COG. Due to the potential complexity of systems relationships, graphic visualization techniques such as those described in the following paragraphs can facilitate systems network analysis.

(1) **Association Matrix.** The format of an association matrix is useful to organize relationship data and characterize the links that exist (or are suspected to exist) among nodes. When constructing the association matrix, relevant nodes are plotted along a diagonal axis. An association between two nodes may be indicated at the intersection of the horizontal and vertical axes and may be characterized as confirmed or suspected, depending on locally established criteria. An example of an association matrix is depicted in Appendix E, "Joint Intelligence Preparation of the Operational Environment Specialized Products."

(2) **Network Analysis Diagram.** Network analysis diagrams graphically depict relationships among a set of entities, which may be people, organizations, communities,

or computers, so long as they are connected in meaningful ways. These links, or relationships, are properties of the group and can represent several different forms of interaction, including kinship (parent of, sibling of), role-based (boss of, rival of), interactive (travels with, meets with), and affective (trusts, likes) relationships. Links typically represent directions of influence among nodes rather than a linear progression. An example of a network analysis diagram is depicted in Figure III-17. JIPOE analysts can construct a systems network analysis diagram manually or through selected automated support systems, synchronization tools, etc. A consolidated network analysis

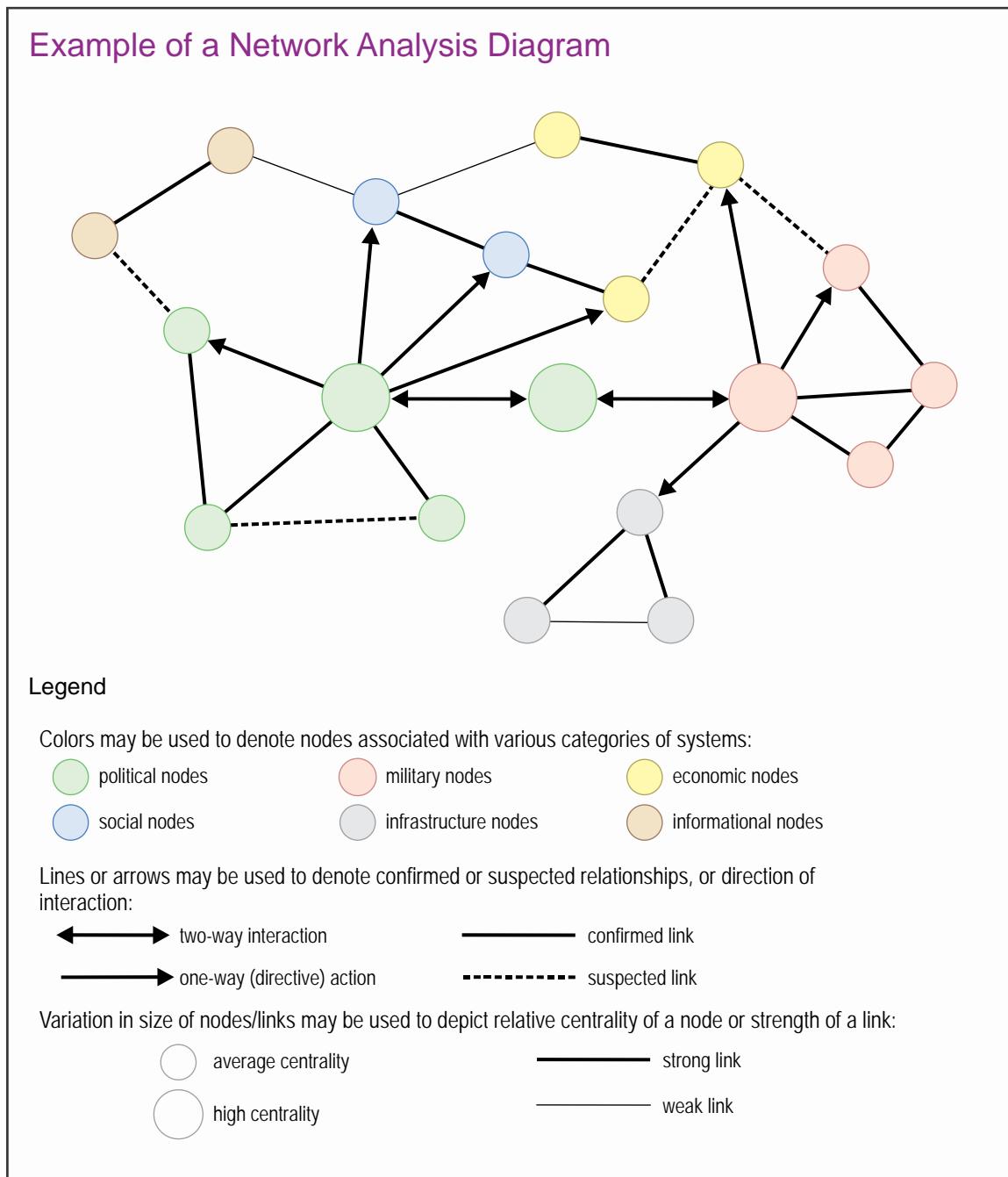


Figure III-17. Example of a Network Analysis Diagram

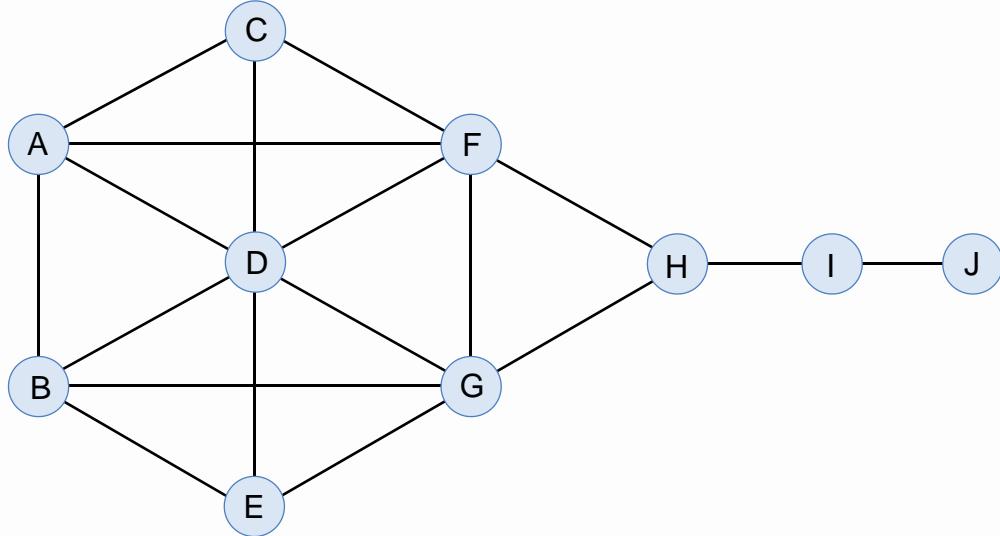
diagram is constructed by combining the individual network diagrams of each system. Although specific network analysis methodology may be locally established, the following general procedures are recommended:

- (a) Nodes are represented by circles, color coded to depict association with a specific system. The size of a node may vary to depict its relative centrality.
- (b) Links are represented by lines between nodes. Solid lines indicate confirmed relationships, dashed lines indicate suspected relationships. Arrows may be used to characterize the relationship (e.g., subordination, flow of information).
- (c) To the extent possible, nodes and links should be positioned to minimize the crossing of lines.

g. Identify Key Nodes. Key nodes exist in every major system and subsystem and are critical to the functioning of their associated systems. For example, a hydroelectric plant could be the key node in a metropolitan area's power grid (a subsystem of the infrastructure system). Some may become decisive points for military operations since, when acted upon, they could allow the JFC to gain a marked advantage over the adversary or otherwise to contribute materially to achieving success. Weakening or eliminating a key node should cause its related group of nodes and links to function less effectively or not at all, while strengthening the key node could enhance the performance of the subsystem and larger system. Key nodes often are linked to, or resident in, multiple systems. For example, a country's religion subsystem could be central to the functioning of the country's social system, and the core group of religious leaders (or a single leader) could be the religious system's key node. Depending on the country's social and political structure, this same group of religious leaders also could be a key node in the political system. Since each PMESII system and subsystem is composed of nodes and links, the capabilities of US instruments of national power (diplomatic, informational, military, and economic) can be employed against selected key nodes to create operational and strategic effects. Although largely influenced by subjective judgment, the identification of a potential key node may be facilitated through an analysis of node centrality (i.e., how individual entities fit in the systems network). Node centrality can highlight possible positions of importance, influence, or prominence, and patterns of connections. A node's relative centrality is determined by analyzing three measurable characteristics: degree, closeness, and betweenness (see Figure III-18).

(1) **Degree** examines a node's centrality in terms of its direct links with other nodes (i.e., its local position in the network). As indicated in Figure III-18, node D has the highest number of direct links to other nodes (high degree centrality), and is an example of what may be termed a "hub." A network centralized around a well-connected hub may be efficient but can fail abruptly if that hub is disabled or removed. In this example, node D likely would be designated a key node. Nodes with low-degree centrality (few direct links) are sometimes described as peripheral nodes (e.g., nodes I and J in Figure III-18). Although they have relatively low centrality scores, peripheral nodes can nevertheless play significant roles as resource gatherers or sources of fresh information from outside the main network.

Measures of Node Centrality



Measures of Node Centrality

Node D is an example of a “hub” and has the highest measure of “degree centrality” (i.e., number of direct links).

Nodes F and G have fewer direct links than D but occupy positions with shorter direct and indirect paths within and between constituencies A-G and H-J (i.e., high measures of “closeness centrality.”)

Node H is an example of a “broker” between two constituencies (Nodes A-G and Nodes I-J), and has the highest measure of “betweenness centrality.”

Figure III-18. Measures of Node Centrality

(2) **Closeness** examines a node’s overall position in a network (i.e., its global position). The difference between degree and closeness is an important distinction, because an individual entity may have many direct contacts, but those contacts may not be well connected to the network as a whole. Consequently, although an individual may have a high level of degree centrality, power and influence might only be exerted locally, not throughout the entire network. Closeness is calculated by adding the number of hops between a node and all others in a network (e.g., adding the number of hops from node A to node B, node A to node C, and node A to node D). A lower score indicates that an individual needs fewer hops to reach others in the network, and is therefore “closer” to others in the network. For example, nodes F and G in Figure III-18 have fewer direct links than node D, but have shorter paths to the other nodes. Nodes with high closeness centrality are in excellent positions to monitor the overall activity flow within the network.

(3) **Betweenness** measures the number of times a node lies along the shortest path between two others. For exchange of information or services a node with high betweenness may play an important “brokerage” or intermediary role. For example, in Figure III-18, node H would occupy one of the most important locations in the network by serving as the only link between nodes I, J, and the remainder of the network. Node H is an example of a broker node and (assuming nodes I and J were sufficiently important to the network as a whole) it might also be designated as a key node. The elimination of a broker node can fragment a network into several subcomponents.

h. **Evaluate the Impact of PMESII Networks on Military Operations.** Systems network analysis facilitates the identification of significant information about a group of entities that might otherwise go unnoticed. For example, network analysis can uncover positions of power within a network, show the basic subgroups that account for a network’s structure, find individuals or groups whose removal would greatly alter the network, and measure network change over time. The impact of a system’s network should be evaluated in terms of network density and distance.

(1) **Density.** Network density examines how well connected a network is by comparing the number of ties actually present in a network to the total number of ties possible. Network density can indicate many things. When a network is highly interconnected fewer constraints exist for the individuals within it: they may be less likely to rely on others as brokers of information, be in a better position to participate in activities, or be closer to leaders, and therefore able to exert more influence upon them. A network with low interconnectivity may indicate that there are clear divisions within a network (e.g., along clan or political lines), or that the distribution of power or information is highly uneven and tightly controlled.

(2) **Distance.** Network distance measures the number of hops between any two nodes in a network. For example, there is one hop between two nodes that are directly connected; there are two hops between nodes that are separated by one intermediary node. Evaluating network distance aids in understanding how information and influence flow through a network and determining a network’s cohesiveness. Larger distances can inhibit the dissemination of information because each hop diminishes the probability of successful interaction. In political, social, and possibly military networks, larger distances may also decrease the ability of individuals to influence others.

4. Describe the Impact of the Operational Environment on Adversary and Friendly Capabilities

The evaluations of all the individual aspects of the OE and the systems perspective are ultimately combined into a single integrated assessment that focuses on the overall impact of the OE on all joint COAs available to both friendly and adversary forces. This assessment may take the form of a briefing, set of overlays, written analysis of the OE, intelligence estimate, or any other format the JFC deems appropriate. Regardless of format, this product is designed to support the development and evaluation of friendly joint COAs by providing the J-3 and J-5 with an evaluated and prioritized set of land, sea, and air avenues of approach, potential engagement areas, key terrain and maritime

geography, key nodes and links, and an analysis identifying periods of optimal weather conditions for specific types of military operations. Likewise, the product enables the J-2 to evaluate the OE from the adversary's perspective, and to express this evaluation in terms of a prioritized set of adversary military COAs, to include any related diplomatic, informational, or economic options. In order to accomplish this, the J-2 must remember to consider the general military capabilities of the adversary force as well as the other characteristics of the OE. For example, the OE may contain several excellent amphibious landing sites, but if the adversary does not have access to amphibious support ships, then an amphibious attack should not be listed as a viable adversary COA. The J-2 should also consider the amount of military force normally located at each of the adversary's naval, ground, and air bases and should assess whether this constitutes an offensive or defensive posture. The final result of step two of the JIPOE process is a preliminary prioritization of adversary COAs based on how well each is supported by the overall impact of the OE. This preliminary prioritization of COAs will be further refined and adjusted during step four of the JIPOE process, as discussed in Chapter V "Determine Adversary and Other Relevant Actor Courses of Action—Step 4."

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CHAPTER IV

EVALUATE THE ADVERSARY AND OTHER RELEVANT ACTORS—STEP 3

“However absorbed a commander may be in the elaboration of his own thoughts, it is sometimes necessary to take the enemy into consideration.”

Winston Churchill
The World Crisis, 1911-1918
1923

1. Overview

The third step in the JIPOE process identifies and evaluates the adversary's capabilities and limitations, current situation, COGs, and the doctrine, patterns of operation, and TTP employed by adversary forces, absent those constraints identified during step two (see Figure IV-1). During this step, models are developed that portray how adversary forces normally execute military operations or how they have reacted to specific military situations in the past. Adversary systems are also analyzed to develop candidate indicators (hypothesized anticipated changes to normal node-link relationships) associated with various COAs.

- a. The JIPOE analyst must take care not to evaluate the adversary's joint capabilities by mirror-imaging US joint and Service doctrine. Effective red teams serve as a check on

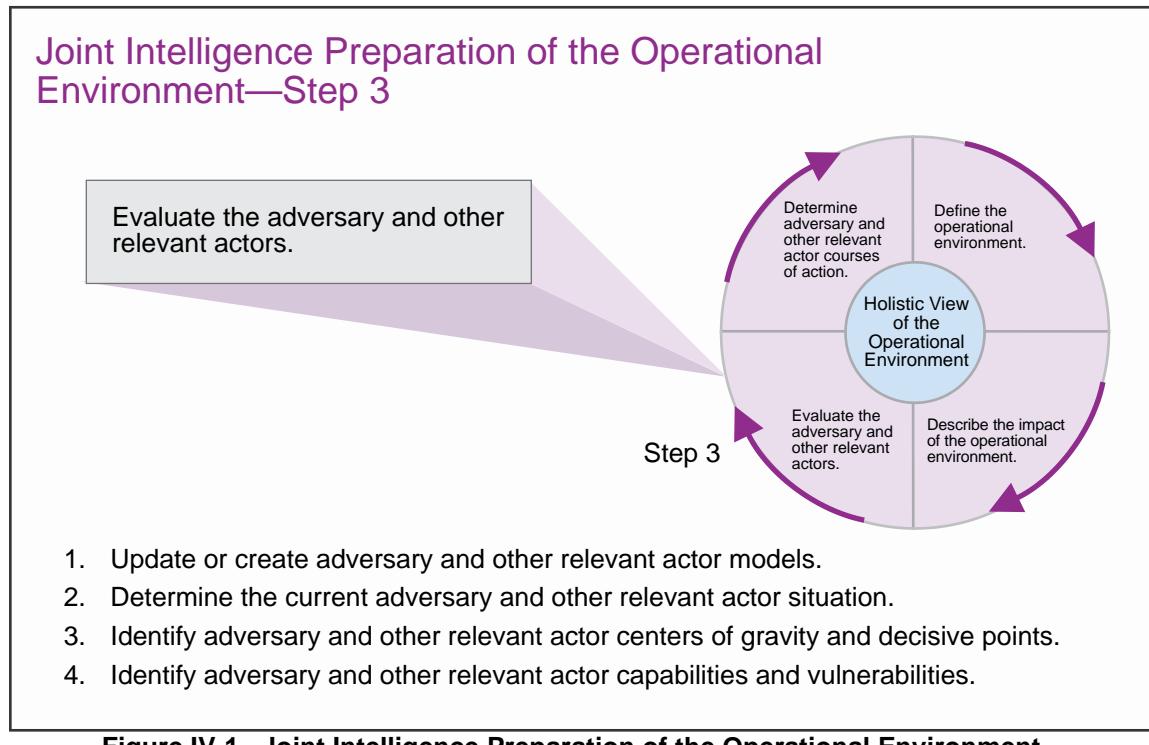


Figure IV-1. Joint Intelligence Preparation of the Operational Environment—Step 3

the analytical effort to avoid mirror imaging, to include identifying COAs not considered. In many cases the joint doctrine of potential adversaries may be embryonic or nonexistent. Although an adversary's components may operate in the same geographic area and may try, more or less, to support each other, joint operations, as practiced by US forces, are rarely conducted. Nevertheless, in virtually all cases, the Service components of an opposing force will at some level of command coordinate their operations according to a set of ad hoc or established procedures. The JIPOE analyst must try to discern the adversary's ability to integrate their capabilities in combined arms operations, no matter how rudimentary it may appear.

b. Adversary capabilities are identified in terms of broad COAs and supporting operations that the adversary can take that may influence the accomplishment of the friendly mission. Failure to accurately evaluate the adversary may cause the command to be surprised by an unexpected adversary capability, or result in the unnecessary expenditure of limited resources against adversary force capabilities that do not exist.

c. In addition to the adversary, it is important to understand other relevant actors that may positively or negatively impact the friendly mission. These actors may include the population, HN government, and potential opposition leaders. Other relevant actors may include international state and non-state actors and/or the NGO community. By first understanding who the relevant actors are and learning as much as possible about them and the relationships between them, the JFC can develop an approach that will facilitate decision making and behavior (active or passive) among relevant actors that is consistent with the desired end state of the operation. SCA and I2 enable a better understanding of the relevant actors. Note that individuals may fit into more than one category of actor. For example, a tribal leader may also work as a district governor, while also working behind the scenes to provide financial and material support to an insurgency. A comprehensive understanding of relevant actors is especially critical during IW and is discussed in greater detail in Section A, "Support During Irregular Warfare," of Chapter VII, "Special Considerations."

2. Update or Create Adversary and Other Relevant Actor Models

Adversary and relevant actor models can depict either an opponent's doctrinal way of operating or their observed patterns of operation under similar conditions. They serve the JFC best when they are not only based on a detailed study of the adversary's normal or "doctrinal" organization, equipment, operational procedures, and node-link relationships, but also take into account how the adversary will react to a specific military situation. Adversary models are normally completed prior to deployment, and are continuously updated as required during military operations. The models consist of three major parts: graphical depictions of adversary patterns of operations related to specific COAs (adversary templates); descriptions of the adversary's preferred tactics and options; and lists of high-value targets (HVTs).

a. **Adversary Templates.** Adversary templates illustrate the employment patterns and dispositions preferred by an adversary in the same or a similar OE. They are usually scaled graphic depictions of adversary dispositions for specific types of military

operations such as: movements to contact, antisurface warfare operations, insurgent attacks in urban areas, combat air patrols, and aerial ambushes. JIPOE utilizes single-service adversary templates that portray adversary land, sea, air, special, or space operations, and produces joint adversary templates that portray the relationships between all the adversary's service components when conducting joint operations. For example, a joint adversary template illustrating an adversary's conventional land offensive, in addition to showing ground force organization and disposition, would also portray the type, number, deployment pattern, and tactics of all supporting assets. An adversary template may also be used to depict anticipated changes to PMESII nodes and links that would be indicative of specific adversary intentions or COAs.

(1) Threat Template Depicting a Geospatial Perspective. Geospatially oriented adversary templates depict the adversary's preferred method of operation in each physical domain (land, air, maritime, space) for each of the adversary's force components (see Figure IV-2 and Figure IV-3). Joint adversary templates should be constructed for all of an adversary's broad joint COAs, such as attack, defend, reinforce, or retrograde. Adversary templates are constructed by analyzing all available intelligence on the

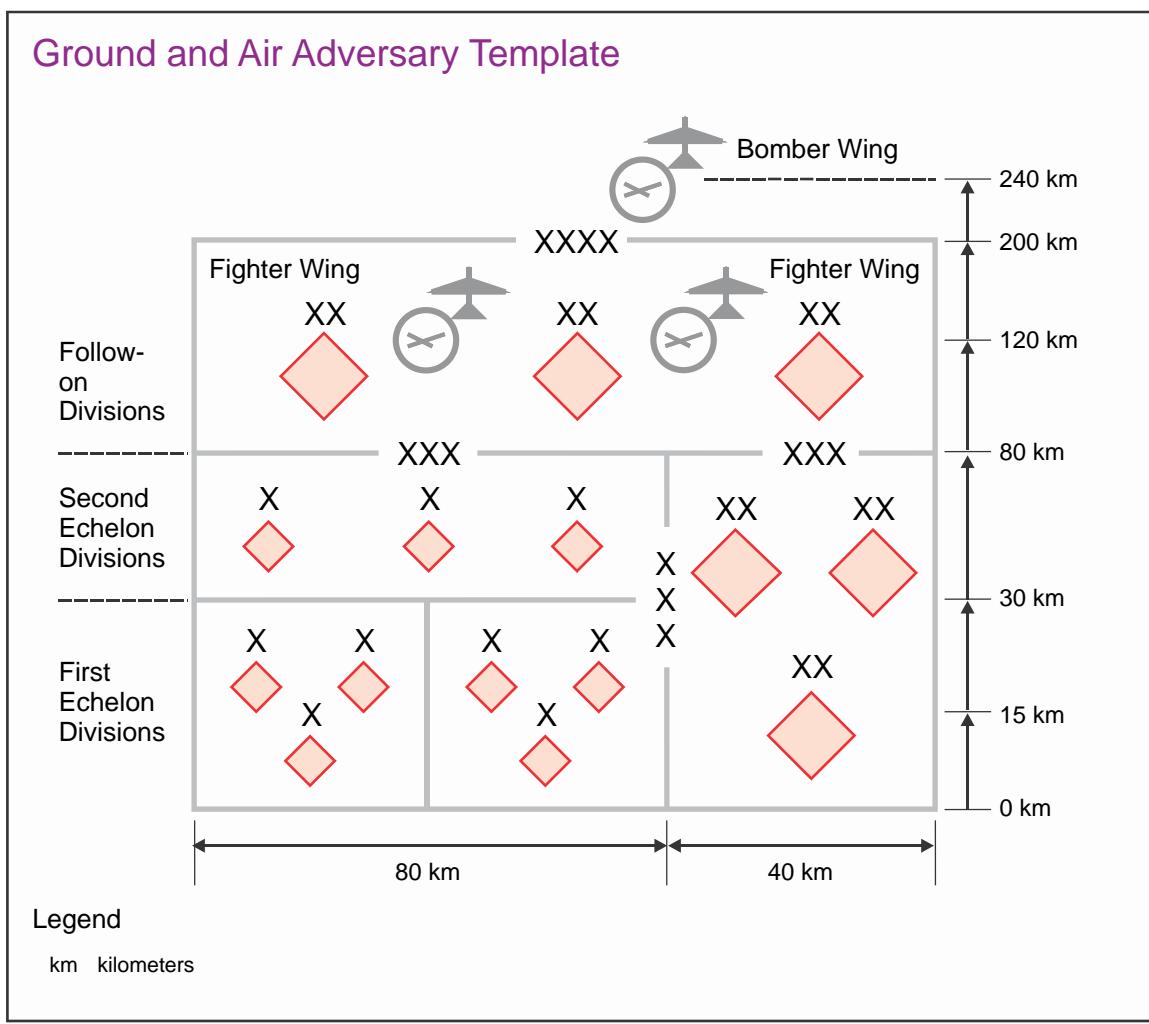
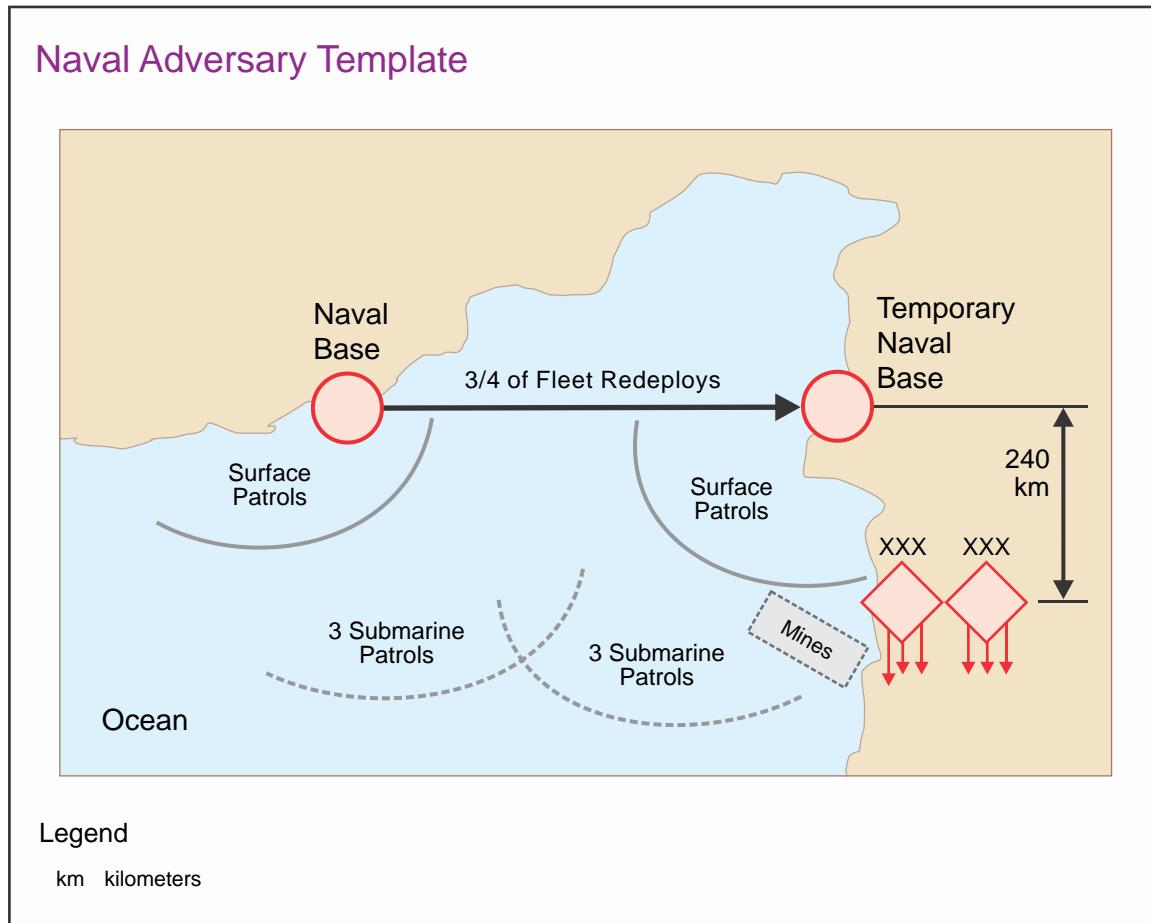


Figure IV-2. Ground and Air Adversary Template

**Figure IV-3. Naval Adversary Template**

adversary's patterns of operation and through an evaluation of the adversary's past operations, military exercises, and preferred practices. Specific factors that should be addressed on this type of adversary template include, but are not limited to:

- (a) Organization for combat.
- (b) Distances (such as frontages, depths, boundaries, spacing between ships, and intervals between march units or waves of attacking aircraft).
- (c) Functions (such as disruption, assault, exploitation, fixing, contact, shielding, or counterattack) that various parts of the adversary force are intended to perform in order to accomplish objectives in a certain type of operation.
- (d) Engagement areas.
- (e) Patterns for the use of terrain and weather.
- (f) Timing and phasing of operations.
- (g) Relative locations and groupings of forces and support units.

(2) Threat Template Depicting a Systems Perspective. JIPOE analysts should also identify anticipated changes in node-link relationships (e.g., establishment of potential new links, disestablishment or modification of current links) that could be indicative (when or if established) of an adversary's or relevant actors' future COAs. These postulated deviations from the normal (or current) node-link structure are potential indicators of adversary and relevant actor intentions and should be based on their past practices, patterns of operation, physical requirements, or expected preferences. For clarity, an association matrix may be used to summarize the anticipated node-link changes associated with each COA. This type of modified association matrix forms a systems perspective counterpart to the more geospatially oriented adversary templates discussed above. Figure IV-4 provides an example of a systems perspective adversary template.

Systems Perspective Adversary Template

A threat template depicting a systems network perspective uses a modified association matrix to highlight anticipated changes in node-link relationships that would indicate a specific adversary intention or course of action.

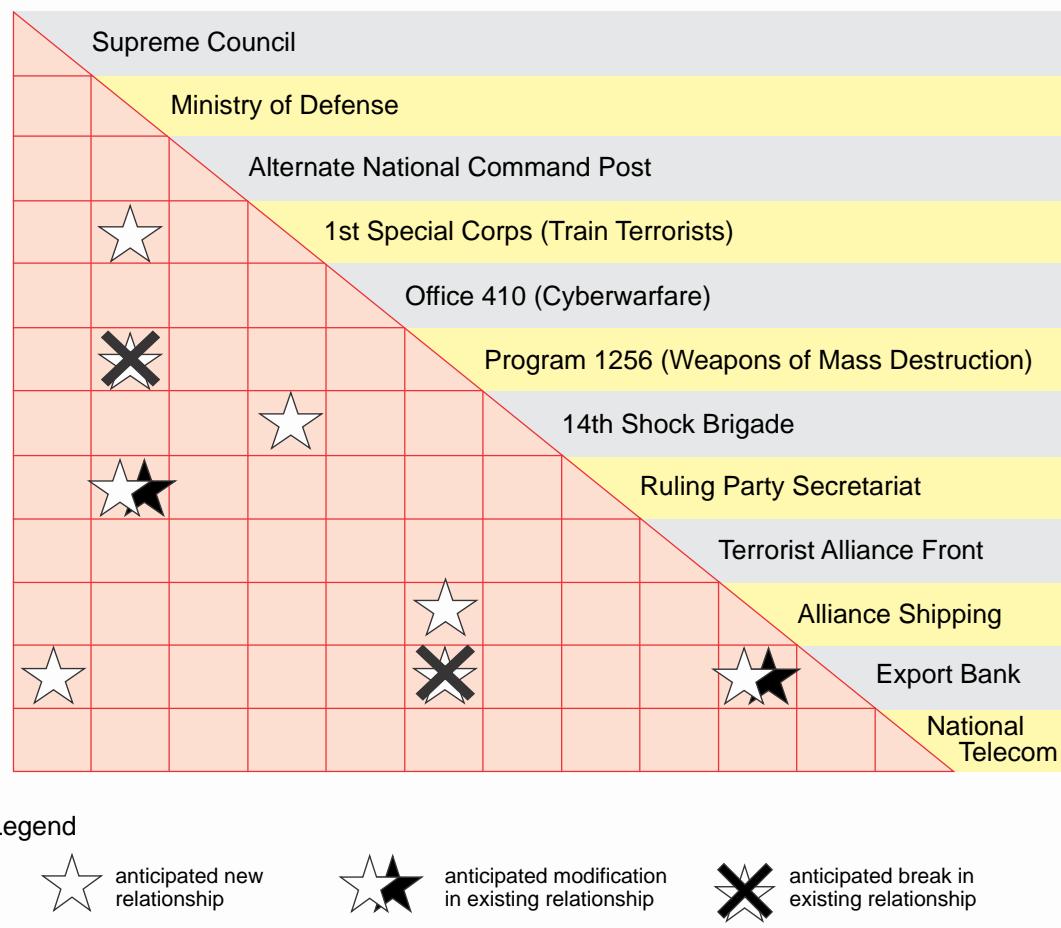


Figure IV-4. Systems Perspective Adversary Template

b. Description of Adversary Tactics and Options. In addition to the graphic depiction of adversary operations portrayed on the adversary template, an adversary model also includes a written description of an opponent's preferred tactics. This description addresses the types of activities and supporting operations that the various adversary units portrayed on the adversary template are expected to perform. It also contains a listing or description of the options (branches) available to the adversary—should either the joint operation or any of the supporting operations fail—or subsequent operations (sequels) if they succeed. For example, an opponent might prefer to follow successful attacks with pursuit. Should an attack begin to fail, the adversary's preferred branches might include committing reserves, reinforcements, or shifting the main effort. Should the attack fail, the preferred sequel might be a hasty defense. Additionally, an opponent's preferences regarding the use of weather or terrain must be addressed. For example, some adversaries may prefer to initiate offensive action during snowstorms or at night. The following are some suggested techniques for use when formulating a description of adversary tactics and options.

- (1) Identify a specific type of joint operation, such as an amphibious attack, and then analyze how each of the adversary's service components contributes or provides support to that operation. In other words, identify the types of supporting operations each component is likely to conduct as part of the adversary's overall joint plan.
- (2) Develop a time-event matrix to describe how an adversary normally conducts specific types of operations. For example, it may be impossible to graphically depict the complex relationships between the air, naval, and ground operations of an adversary's operation. In this case, a time event matrix could be used to show the sequencing of specific types of adversary operations and component supporting operations, as well as changes in the organization, composition, and likely disposition of adversary forces during each phase of the operation (see Figure IV-5).
- (3) Annotate the adversary template with marginal notes that are tagged to key events or positions on the template. For example, marginal notes might describe how an adversary normally reallocates air assets if a breakthrough is achieved during a ground offensive.
- (4) Identify and list any decision criteria known to cause the adversary to prefer one option over another. This information will aid in wargaming adversary and friendly COAs, targeting, and deception planning.
- (5) Describe the actions of each component of the joint force in sufficient detail to facilitate the later identification of HVTs and high-payoff targets (HPTs). An HVT is a target the enemy commander requires for the successful completion of the mission. An HPT target is a target whose loss to the enemy will significantly contribute to the success of the friendly COA. Since the target's value usually varies with its role in each phase of the operation, each phase should be examined and described separately.

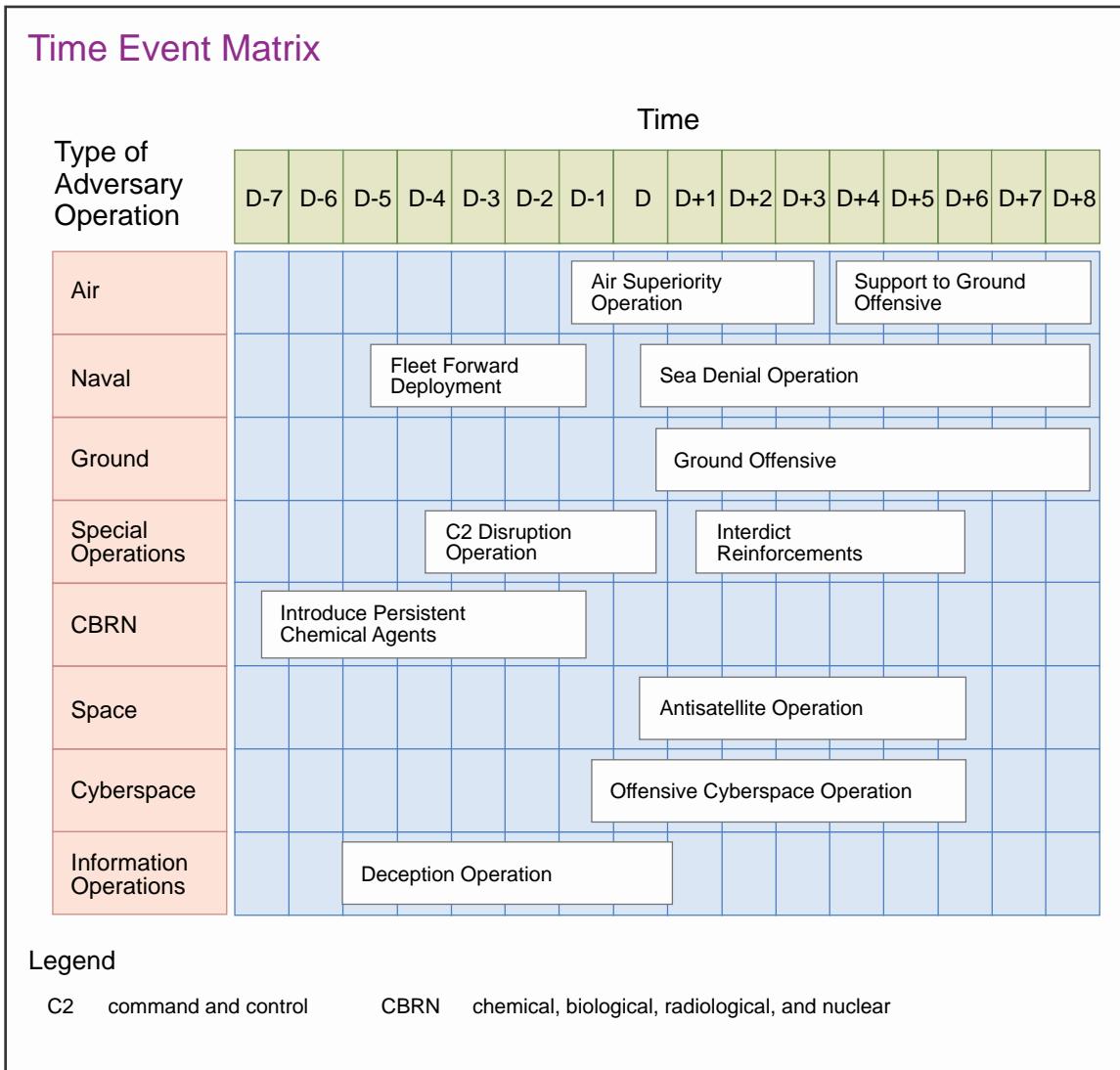


Figure IV-5. Time Event Matrix

c. **List of HVTs.** The adversary model should also include a list of HVTs. These targets are identified by combining operational judgment with an evaluation of the information contained in the joint adversary template and description. Assets are identified that are critical to the success of the adversary's mission, that are key to each adversary component's supporting operation, or that are crucial to the adversary's adoption of various branches or sequels to the operation. For example, an adversary ground force defending a front across a peninsula may be vulnerable to amphibious flanking attacks in its rear area. In this situation, the adversary's ability to deny access to its rear area coastal waters may be crucial, and therefore its coastal defense assets (artillery, antiship cruise missiles, local surface and subsurface combatants) may constitute HVTs. SCA can be useful to identify and broaden the JFC's understanding of HVTs as well as potentially revealing additional options for lethal and nonlethal actions against them and determining second- and third-order effects of those actions. Within IW environments, adversary HVTs may include keys nodes within the associated human

threat network. For example, the adversary may be dependent on support from local tribal/village leaders, or transnational criminal/drug trafficking organizations to operate in the local vicinity, town, village, or sub-province, or to gain access to friendly bases through contract or local national employees. Either of these groups may also exert influence with regional or international violent extremist organizations, and they all may provide either direct or indirect support to adversary operations. In this instance, the individuals used as middlemen to communicate or coordinate among tribal/village elders or criminal organizations may constitute HVTs. The JFC, in conjunction with the national IC, collaborates to identify HVTs with appropriate analytic production centers. This collaboration should be conducted by any available secure communications means. The following techniques may be useful in identifying and evaluating HVTs:

- (1) Identify HVTs by mentally wargaming and thinking through the joint operation under consideration and how the adversary will use the assets of each component to support it.
 - (2) Determine how the adversary might react to the loss of each identified HVT. Consider the adversary's ability to substitute other assets (from another component or a different operational area), or to adopt a different option.
 - (3) Evaluate and rank order all HVTs according to their relative worth to the adversary's operation. Also, analyze whether a target's value depends on, or changes with, each phase of the operation.
 - (4) Construct a target value matrix by grouping HVTs according to their function. The target value matrix should indicate the relative worth of each HVT category and describe how an attack on that category (to include the timing of the attack) would affect the adversary's operation (see Figure IV-6).
- d. Information environment characterization should be integrated into adversary and other relevant actor models to provide the most complete picture of the OE.

3. Determine the Current Adversary and Other Relevant Actor Situations

All available intelligence sources, methods, technologies, and databases should be continuously exploited in an effort to analyze and determine the current situation of the adversary and other relevant actors. This analytic effort should focus on OB factors for each adversary air, naval, SOF, and ground unit known to be deployed within the AOI, or that is otherwise capable of interfering with the friendly mission.

- a. Current information pertaining to the composition and disposition of adversary forces is particularly important and will normally be maintained on the J-2's adversary situation overlay.
- b. The current adversary situation is based on assessments of the following OB factors for each adversary force or military unit:

Target Value Matrix

Effect on Adversary			Target Set	Relative Worth		
Disrupt	Delay	Limit		X	X	X
X		X	Command, Control, and Communications	X	X	X
X			1st Army Main Command Post (CP)			
X		X	National Air Defense CP			
		X	State Defense CP			
	X		Lines of Communications	X		
	X		Bridge Highway 102			
	X		Main Railyard			
	X	X	Bulk Fuels	X	X	
	X	X	Refinery #707			

Annotations:

- Command, Control, and Communications: Most important during initial phase of air campaign: No backup CP available
- Lines of Communications: Delays reinforcements during Phase 2 and resupply during Phase 3
- Refinery #707: Limits military units to 45 day diesel stockpile

Figure IV-6. Target Value Matrix

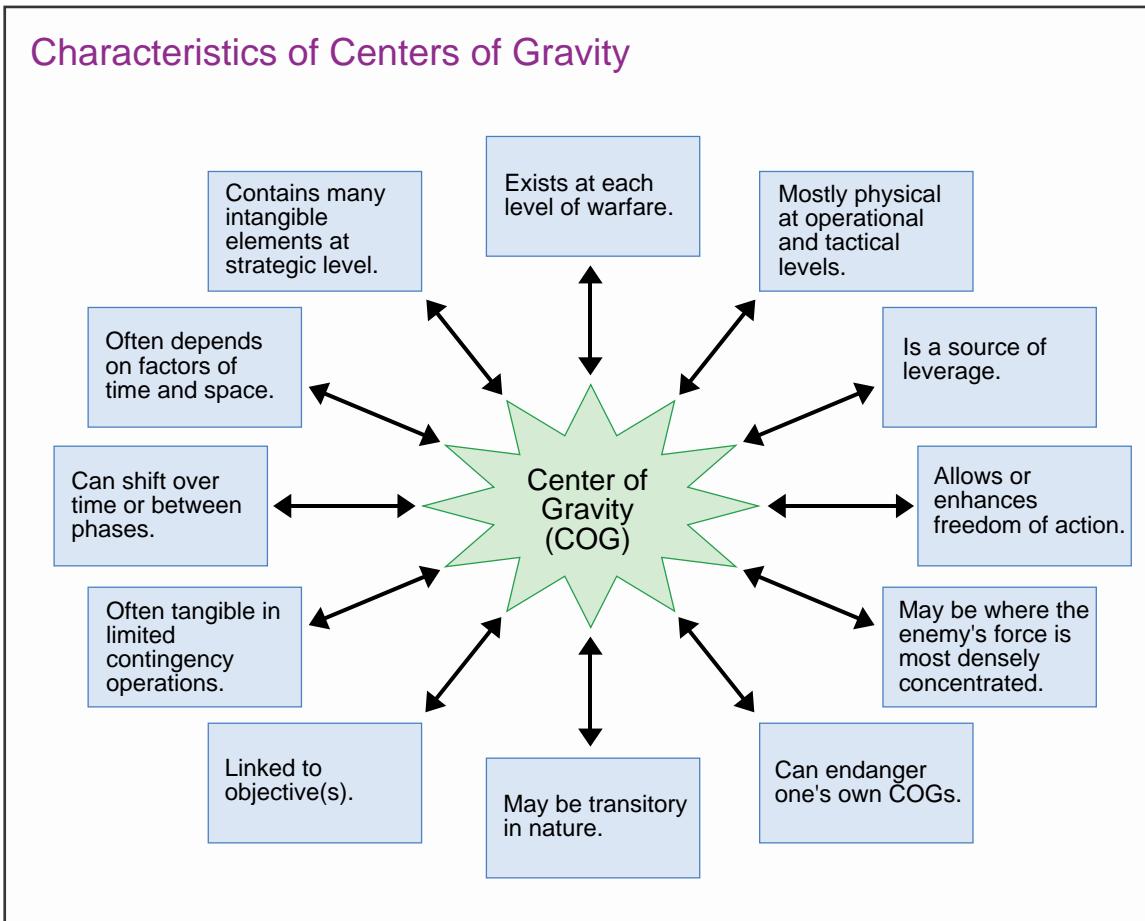
- (1) Composition;
- (2) Disposition;
- (3) Strength;
- (4) TTP;
- (5) Training status;
- (6) Logistics;
- (7) Effectiveness;
- (8) Electronic technical data;
- (9) Personalities;
- (10) Miscellaneous data (information that contributes to situational awareness, historical studies, cultural idiosyncrasies, civil-military relations).

c. In some situations, for example when dealing with asymmetric threats, traditional adversary OB models may not be sufficient. In these situations it is particularly important to analyze the situation not just for the adversary, but for all other relevant actors. The current situation for friendly, neutral, and threat actors is based on assessments of the following capabilities:

- (1) Logistics;
- (2) Leaders;
- (3) Ideology;
- (4) Fighters;
- (5) Training;
- (6) Weapons;
- (7) Safe havens;
- (8) Freedom of movement;
- (9) Intelligence;
- (10) Communications; and,
- (11) Finance.

4. Identify Adversary and Other Relevant Actor Centers of Gravity and Decisive Points

a. **COGs.** One of the most important tasks confronting the JIPOE analyst is the identification of adversary COGs. A COG is the source of power that provides moral or physical strength, freedom of action, and will to act. A COG is always linked to the objective. If the objective changes, the COG could also change. At the **strategic level**, a COG could be a military force, an alliance, political or military leaders, a set of critical capabilities or functions, or national will. At the **operational level** a COG often is associated with the adversary's military capabilities—such as a powerful element of the armed forces—but could include other capabilities in the OE. Since the adversary will protect the COG, the COG most often is found among strengths rather than among weaknesses or vulnerabilities. JIPOE analysts continuously assess the adversary's leadership, fielded forces, resources, intelligence capabilities, infrastructure, population, transportation systems, and internal and external relationships to determine from which elements the adversary derives freedom of action, physical strength, or the will to fight. A determination is made to see if candidate COGs are truly critical to the adversary strategy and must include a thorough examination of the mechanisms and linkages by which COGs affect adversary strategy and potential COAs. Figure IV-7 shows a number of characteristics associated with COGs.

**Figure IV-7. Characteristics of Centers of Gravity**

(1) The most effective method for JIPOE analysts to identify adversary COGs is to visualize each COG's role/function relative to each of the various systems and subsystems. For example, the leader of an adversary nation could be a strategic COG in the military and political systems as well as a key node in the nation's social system. Analysts also can visualize a COG as a system (nodes, links, functions, etc.) to analyze what elements within this system protect, sustain, integrate, or enable its various elements or components. In this context, a COG might be composed of nodes and links entirely within a single system, which is more often the case in the seize initiative and dominate phases of large-scale combat operations. However, a COG can also be composed of a set of cross-system nodes and links that might encompass key nodes of one or more systems. This distinction provides visibility to these nodes in the targeting process and emphasizes their potential importance to the operation.

(2) A COG typically will not be a single node in the system, but will consist of a set of nodes and their respective links. However, a single node might be considered a COG as an exception, such as when the adversary senior military leader is also the political leader and the nature of the adversary's political and military systems is such that the leader's demise would cause support for the conflict by other leaders in these systems to collapse. Also, systems are viewed differently at different levels. For

example, the CCDR might consider an adversary critical capability (such as an armored corps) to be a single node in the adversary's military system, while a JFC who must attack this capability would analyze it as a system of nodes and links in an effort to determine its critical capabilities and vulnerabilities.

(3) A proper analysis of adversary critical factors must be based on the best available knowledge of how adversaries organize, fight, think, make decisions, and on their physical and psychological strengths and weaknesses. JIPOE analysts must understand their adversaries' capabilities and vulnerabilities, and factors that might influence an adversary to abandon or change strategic objectives. They must also envision how friendly forces and actions appear from the adversaries' viewpoints. Otherwise, they may fall into the trap of ascribing to an adversary's particular attitudes, values, and reactions that mirror their own.

(4) The JIPOE staff should analyze COGs within a framework of three factors—critical capabilities, critical requirements, and critical vulnerabilities. **Critical capabilities** are those means that are considered crucial enablers for a COG to function as such, and are essential to the accomplishment of the adversary's specified or assumed objective(s). **Critical requirements** are the conditions, resources, and means that enable a critical capability to become fully operational. **Critical vulnerabilities** are those aspects or components of critical requirements that are deficient, or vulnerable to direct or indirect attack in a manner achieving decisive or significant results. However, in identifying critical vulnerabilities, JIPOE analysts must also compare their criticality with their accessibility, vulnerability, redundancy, ability to recuperate, and impact on the civilian populace. JIPOE analysts use a systems perspective to identify the critical factors associated with each adversary COG. For example, Figure IV-8 depicts the critical capabilities, critical requirements, and critical vulnerabilities associated with two of the adversary's strategic and operational COGs.

b. **Decisive Points.** A decisive point is a geographic place, specific key event, critical factor, or function that, when acted upon, allows a commander to gain a marked

CENTER OF GRAVITY AND CRITICAL VULNERABILITIES

During the Battle of Britain in 1940, an operational center of gravity for Britain was the Royal Air Force Fighter Command. A critical capability for Fighter Command was the ability to meet Luftwaffe attacks in a timely manner. The critical requirement linked to that specific critical capability was advance warning regarding the timing, strength and direction of Luftwaffe attacks. The critical vulnerability linked to that specific critical requirement was the fragility and vulnerability of the British radar system that provided the advance warning. However, the Germans did not realize the importance of the radar system and did not follow up their early attacks against it.

SOURCE: Joe Strange, *Marine Corps University Perspectives on Warfighting*, Number 4, 1996

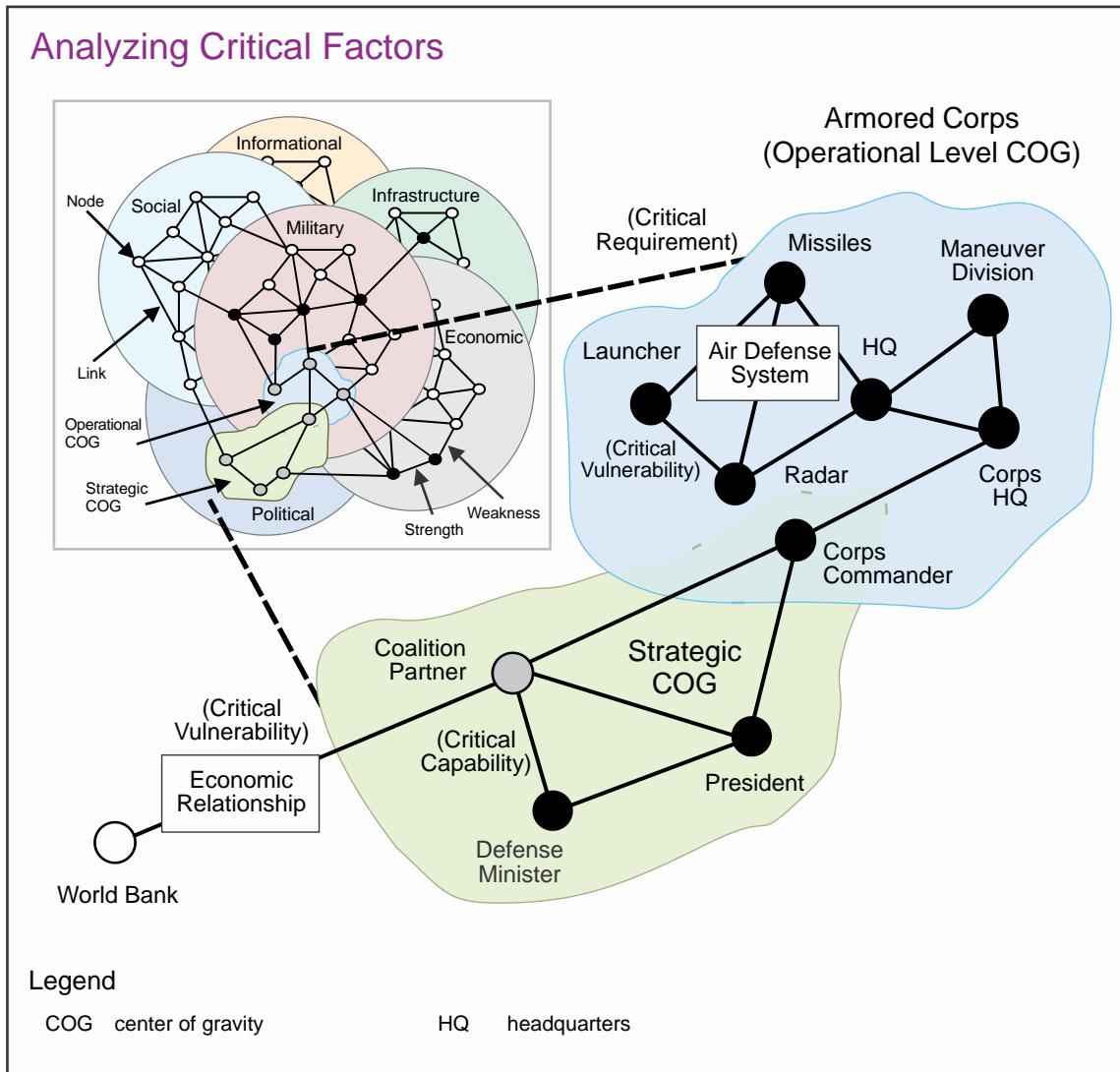


Figure IV-8. Analyzing Critical Factors

advantage over an adversary or contributes materially to achieving success (e.g., creating a desired effect, achieving an objective). This can greatly influence the outcome of an action. Decisive points can be physical in nature, such as a constricted sea lane, a hill, a town, WMD or CBRN capabilities, or an air base; but they could include other elements such as command posts, critical boundaries, airspace, or communications and/or intelligence nodes. In some cases, specific key events also may be decisive points, such as attainment of air or maritime superiority, commitment of the adversary's reserve, or opening a supply route during humanitarian operations. In still other cases, decisive points may have a larger systemic impact, such as a node or combination of nodes which, when acted on, can substantially affect the OE's systems. A decisive point could also be when a threat network's capabilities are diminished to the point that HN capability can now handle the threat with little or no outside assistance. The friendly HN military and security forces can competently act to provide a stable region and legitimize the HN government.

(1) The most important decisive points can be determined from analysis of critical factors. As part of the node-link network analysis associated with a systems perspective, understanding the relationship between a COG's critical capabilities, requirements, and vulnerabilities can illuminate decisive points.

(2) JIPOE analysts should identify and study potential decisive points and determine which of them offer the best opportunity to attack the adversary's COGs indirectly, extend friendly operational reach, or enable the application of friendly forces and capabilities.

5. Identify Adversary and Relevant Actors' Capabilities and Vulnerabilities

Adversary capabilities are expressed in terms of the broad COAs and supporting operations that the adversary can take to interfere with the accomplishment of the friendly mission. In conventional operations, these are generally defined as offense, defense, reinforcement, and retrograde. Each of these broad COAs can be divided into a variety of more specific COAs. For example, a retrograde might take the form of a delay or withdrawal, while an offensive operation might consist of an envelopment or penetration. Other significant capabilities may include the use of CBRN weapons, amphibious assaults, EW, and deception operations. CBRN weapons may be employed to cause casualties, limit movement (area denial), and/or force individuals to don protective equipment thereby potentially limiting their mission effectiveness. Deception can involve misinformation, disinformation, or propaganda targeting specific or general audiences. IO and public affairs staffs collaborate and synchronize their respective information activities to counter adversary information influence efforts. An example of this synchronization could include development and execution of an IO plan to counter adversary propaganda efforts that could prevent friendly use of technologies such as nonlethal weapons and directed energy systems. When appropriate, the techniques described in the following paragraphs should also be applied to relevant actors capable of influencing the friendly mission.

EXAMPLES OF ADVERSARY CAPABILITIES

(1) “The adversary has the capability to attack with up to six divisions supported by 150 daily sorties of fixed-wing aircraft, but is capable of penetrating no further than line BRAVO due to insufficient fuel reserves.”

(2) “The adversary has the capability to interdict friendly sea lines of communications at chokepoints GREY and BLUE after repositioning units of the 4th Fleet. Current naval deployments preclude an attack before 4 August.”

(3) “Adversary insurgents will have the capability to resume offensive action after the fall harvest is completed in October.”

Various Sources

- a. Adversary and relevant actor capabilities are determined by comparing the current situation with each of the models already constructed. Based on the current situation, the ability of the adversary and relevant actors to actually meet the criteria described by each model is evaluated. Usually, the adversary's and relevant actors' actual capabilities will vary from the ideal capabilities represented by a model. Adversary and relevant actors' capabilities that fall short of requirements reflected in previous patterns of operation or adversary doctrine should be identified as vulnerabilities, while capabilities that meet or exceed requirements are listed as strengths. When time or some other factor is assessed to be a critical element in an adversary or relevant actors' capability, it should be explicitly stated in the overall capability statement.
- b. The J-2 should disseminate the evaluation of adversary capabilities, strengths, and weaknesses to the other joint force staff sections as soon as possible. The intelligence estimate is the traditional vehicle for disseminating this type of evaluation. However, in order to facilitate operational planning, the evaluation may be disseminated by any means and in any form deemed appropriate by the JFC.

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CHAPTER V

DETERMINE ADVERSARY AND OTHER RELEVANT ACTOR COURSES OF ACTION—STEP 4

“Gentlemen, I notice that there are always three courses [of action] open to an enemy, and that he usually takes the fourth.”

**Field Marshal General Helmuth von Moltke the Elder
Chief of the German General Staff
(1857-1888)**

1. Overview

The first three steps of the JIPOE process help to provide JFCs, subordinate commanders, and their staffs with a holistic view of the OE by analyzing the impact of the OE, assessing adversary doctrine and capabilities, and identifying adversary COGs and decisive points. The fourth step of the JIPOE process builds upon this holistic view to develop a detailed understanding of the adversary’s and other relevant actors’ probable intent and future strategy. The process for step 4 (see Figure V-1) provides a disciplined methodology to analyze the set of potential adversary COAs in order to identify the COA

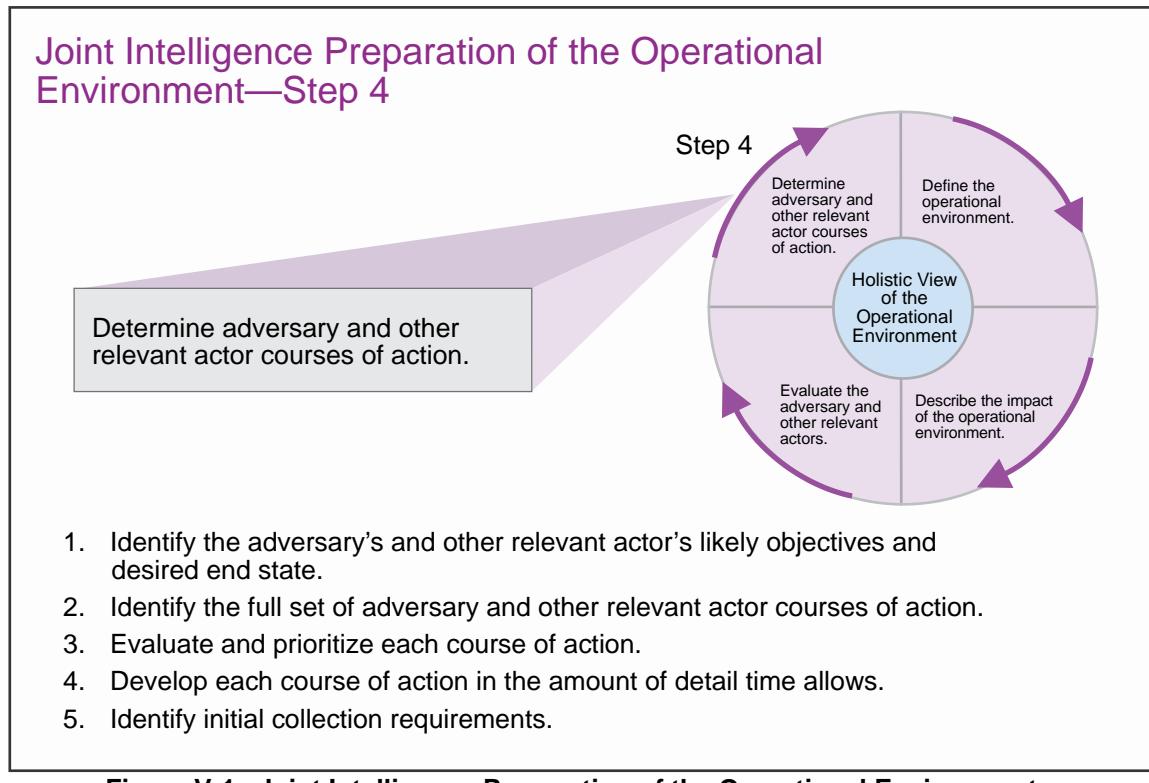


Figure V-1. Joint Intelligence Preparation of the Operational Environment—Step 4

the adversary is most likely to adopt, and the COA that would be most dangerous to the friendly force or to mission accomplishment.

2. Identify the Adversary's and Other Relevant Actors' Strategy, Likely Objectives, and Desired End State

The likely objectives and desired end state of the adversary and other relevant actors are identified by analyzing the current military and political situation, strategic and operational capabilities, and the sociocultural characteristics of the adversary and other actors. The JIPOE analyst should begin by identifying the overall strategic objectives of all relevant actors, which will form the basis for identifying likely objectives and desired end states. The J-2 should identify likely objectives for all major adversary military forces operating in the joint force's AOI and for all other actors capable of influencing friendly mission accomplishment. Usually there will not be sufficient information available to state adversary objectives as fact. In such cases, the J-2 will postulate likely adversary objectives and will identify them as assumptions. These assumptions should be coordinated with the JFC and J-3. Due to the importance of correctly identifying the adversary's strategy, likely objectives, and desired end state, command red teams should concurrently perform independent analysis of these subjects, and, when appropriate, propose alternatives for consideration by the JIPOE coordination cell. Adversary objectives may be expressed in terms of the echelon or type of military force to be decisively engaged (such as aircraft carriers, operational reserves, or lift capabilities) or as key geographic features to be seized or retained. Sometimes objectives will have dual purposes. During World War II, the Japanese attack against Midway was designed not only to seize key military geography, but also to force a situation in which US Pacific Fleet assets (especially aircraft carriers) could be decisively engaged and destroyed. At times, refined information regarding the adversary's OB and military situation may remain elusive. However, an understanding of the adversary's doctrine and mindset to include likely perceptions regarding the overall situation and environment, may provide a sufficient basis to make useful estimates regarding the range of options that the adversary believes are open. Appendix C, "Operation IRAQI FREEDOM—A Case Study in Determining Relevant Actor Courses of Action," illustrates the importance of analyzing relevant actors and their COAs.

3. Identify the Full Set of Adversary and Other Relevant Actor Courses of Action

During this step, a consolidated list of all potential adversary COAs is constructed. At a minimum this list will include all COAs that the adversary's doctrine or pattern of operations indicates are appropriate to the current situation and accomplishment of likely objectives; all adversary COAs that could significantly influence the friendly mission, even if the adversary's doctrine or pattern of operations indicates they are suboptimal under current conditions; and all adversary COAs indicated by recent activities or events.

- a. Each identified COA should meet the following five criteria:

- (1) **Suitability.** An adversary COA must have the potential to achieve the adversary's likely objective or attain the desired end state.

(2) **Feasibility.** The adversary must have sufficient time, space, and resources to successfully execute the COA. However, a COA should not be assessed as unfeasible until all actions the adversary may take to overcome resource shortfalls are considered. Actions and reactions between the adversary and all relevant actors in the OE may help to better determine feasibility. For example, an adversary may make up for insufficient force ratios by conducting an economy of force operation in another sector. Always try to anticipate innovative or seemingly radical measures the adversary may adopt.

(3) **Acceptability.** The amount of risk associated with the COA should not exceed the level of risk acceptable to the adversary. The JIPOE analyst should determine the adversary's level of risk acceptance by analyzing past adversary military activity, current OB factors, interactions amongst relevant actors, and the psychological profiles of adversary leaders. In some instances, however, an opponent may be willing to tolerate a higher level of risk than normal, particularly if a risky COA is the only means of accomplishing the objective. The increasing use of suicide attacks by terrorists and the proliferation of WMD and CBRN technology illustrate the increased levels of risk now acceptable to potential adversaries.

(4) **Uniqueness.** Each adversary COA must be significantly different from the others; otherwise it should be considered a variation rather than a distinct COA. Factors contributing to the uniqueness of a COA may include its effect on the friendly COA, use of reserves, location of the main effort, scheme of maneuver, or task organization.

(5) **Consistency with Adversary Doctrine or Actors' Patterns of Operation.** The COA should be consistent with the adversary's doctrine, TTP, and observed practices. However, caution should be taken to guard against an adversary's attempt to achieve surprise by deliberately deviating from known doctrine or previously observed practices. The JIPOE analyst must ensure agendas from all relevant actors are accounted for as those actors other than the adversary may interact with the adversaries and shape their doctrine or patterns of operation. Additionally, the availability of new technology or desperation may also drive an adversary and other actors to deviate from past doctrine or previous patterns of operation. The challenge to the JIPOE analyst is to anticipate such changes. Red cell threat emulation and command red team alternative assessments can help to accurately reflect adversary patterns of operation.

b. The consolidated list of adversary COAs is compared with the evaluation of adversary and relevant actor capabilities developed during step three of the JIPOE process. Any COA that the adversary is not capable of executing is eliminated from the list. However, caution must be taken when eliminating adversary COAs from consideration. The JIPOE analyst must have a high degree of confidence that the adversary truly lacks the means of adopting such COAs, and is incapable of innovation or a change in TTP that may make such a COA feasible.

c. The adversary templates (created during JIPOE step three) associated with each of the remaining COAs are analyzed relative to the impact of the OE (described during JIPOE step two). The JIPOE analyst will assess how the OE may constrain or modify the actual implementation of the adversary models for each COA. Usually the OE will either

help or hinder the application of an adversary's doctrine or previous patterns of operation, thereby further delimiting the number of "feasible" COAs.

d. Each of the remaining broad COAs is refined into more specific COAs by adding details such as the timing or phasing of operations and the location of the adversary's main and supporting efforts.

e. All factors that may lead the adversary to adopt "wildcard" COAs should be considered. These factors may include:

- (1) The adversary's perception of friendly force capabilities, vulnerabilities, dispositions, and intentions.
- (2) An understanding of military art and science that is unsophisticated, or that differs significantly from US practices.
- (3) Immature decision-making processes.
- (4) The relative importance of "other characteristics of the OE" (such as politics, religious conflict, and ethnic strife).
- (5) Desperation.
- (6) Other actors' actions and reactions within the OE that affect the adversary's decision making and capabilities.

4. Evaluate and Prioritize Each Course of Action

The full set of identified adversary COAs is evaluated and ranked according to the likely order of adoption. The purpose of the prioritized list of adversary COAs is to provide JFCs and their staffs with a starting point for the development of a plan or order that takes into consideration the most likely adversary COA as well as the adversary COA most dangerous to the friendly force or mission accomplishment.

a. Caution should be exercised to remember that these COAs are only estimates of an adversary's intentions, not facts. It should also be kept in mind that actions associated with a friendly COA may cause the adversary to change to a different COA than the one originally adopted. Therefore, the adversary's reaction to changes in friendly force dispositions as well as relevant actors' actions should be continuously analyzed to determine if the adversary has changed to a different COA. This, in turn, may require a reprioritization of the initial list of adversary COAs and result in the joint force staff developing branch plans.

b. The JIPOE analyst must also be constantly on guard against possible adversary deception efforts. The adversary may deliberately adopt a less than optimum COA in order to maximize surprise. Additionally, the adversary may gradually increase preparations for a specific COA over a lengthy period of time, thereby "psychologically conditioning" the JIPOE analyst to accept a level and type of adversary activity,

previously considered to be abnormal, as a new norm. Finally, the JIPOE analyst should understand that the adversary's intelligence capabilities may not present the same picture to adversary decision makers as JIPOE analysts perceive.

- c. The following procedures should be used when prioritizing adversary COAs:
 - (1) Analyze each COA to identify its strengths and weaknesses, COGs, and decisive points.
 - (2) Evaluate how well each COA meets the criteria of suitability, feasibility, acceptability, uniqueness, and consistency with doctrine. The JIPOE analyst should avoid cultural bias by considering these criteria in the context of the adversary's culture.
 - (3) Evaluate how well each COA takes advantage of the OE.
 - (4) Compare each COA and determine which one offers the greatest advantages while minimizing risk.
 - (5) Consider the possibility that the adversary may choose the second or third most likely COA while attempting a deception operation portraying adoption of the best COA.
 - (6) Analyze the adversary's current dispositions and recent activity to determine if there are indications that one COA has already been adopted.
 - (7) Guard against being "psychologically conditioned" to accept abnormal levels and types of adversary activity as normal. Identify and focus in greater detail on those adversary preparations not yet completed that are, nevertheless, mission essential to accomplish a specific COA.
 - (8) Assess the adversary's intelligence capabilities to collect on and analyze friendly forces.

5. Develop Each Course of Action in the Amount of Detail that Time Allows

Subject to the amount of time available for analysis, each adversary COA is developed in sufficient detail to describe: the type of military operation; the earliest time military action could commence; the location of the action, and the objectives that make up the COA; the OPLAN to include scheme of maneuver and force dispositions; and the objective or desired end state. Each COA should be developed in the order of its probability of adoption, and should consist of a situation template, a description of the COA, and a listing of HVTs.

- a. **Situation Template.** Situation templates are graphic depictions of expected adversary force dispositions at a specific time and place relative to an individual COA. As such, they represent "snapshots in time" of how the adversary will array and maneuver military forces and irregular forces based on doctrine and the characteristics of the OE. Depending on its complexity, an adversary COA may be depicted by a single

situation template (usually depicting the most critical point of the adversary's operation) or a series of situation templates depicting points where the adversary might adopt branches or sequels to the main COA. A systems perspective situation template should be constructed by comparing the consolidated systems overlay with the modified association matrix that depicts anticipated network changes for specific COAs. Situation templates are designed to facilitate wargaming by the JFC and joint force staff. The following techniques (see Figure V-2) should be used when constructing situation templates:

(1) **Geospatial Perspective.** To construct a situation template relative to the physical aspects of the OE, select the adversary template representative of the COA under consideration. Overlay the adversary template on the MCOO or other products that depict the impact of the OE on the operation. Based on the adversary's preferred tactics, adjust the dispositions portrayed on the adversary template to account for the impact of the OE. Check the situation template to ensure that all the adversary's major assets are accounted for and that none have been inadvertently duplicated. Ensure that the situation template depicts the locations and activities of all the HVTs listed in the adversary model.

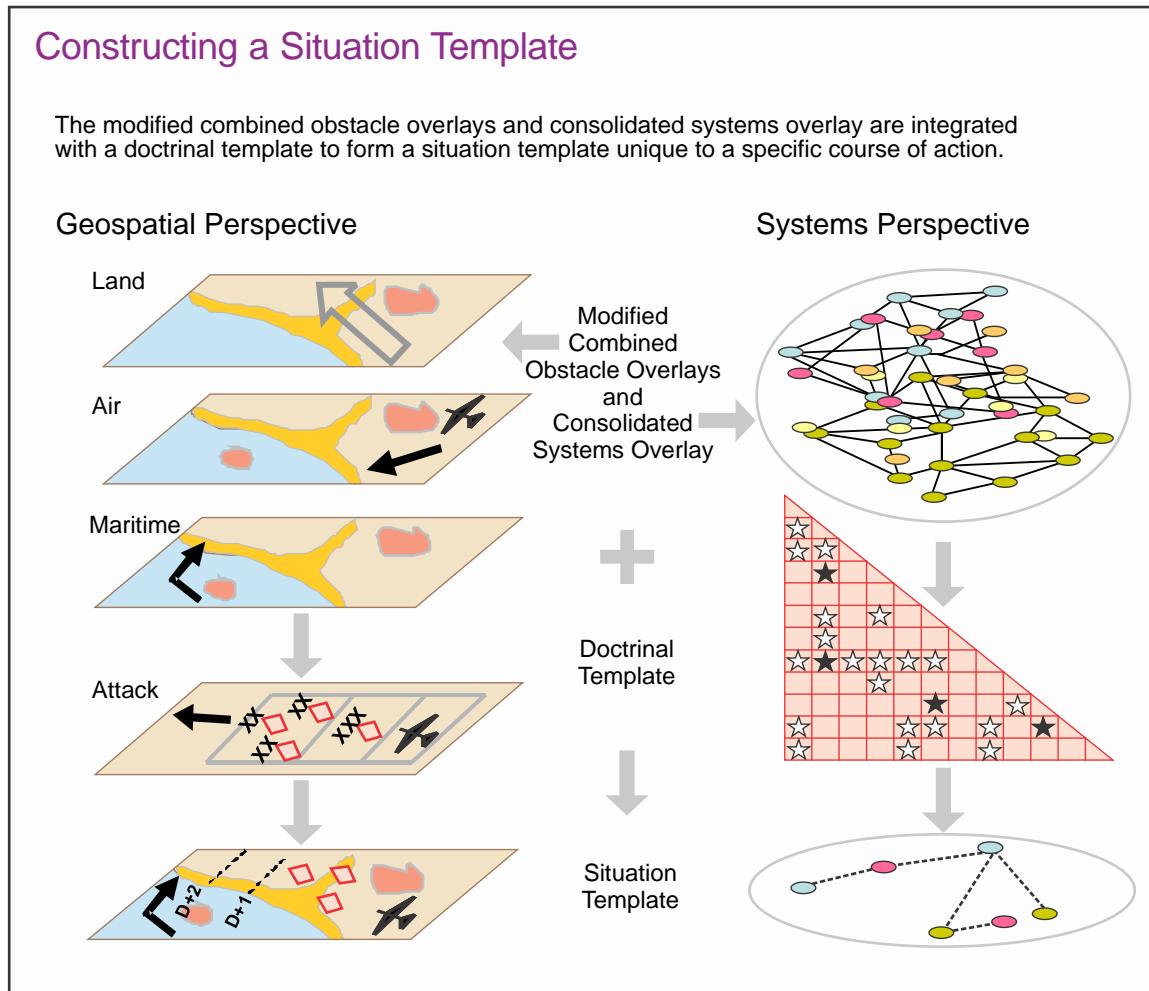


Figure V-2. Constructing a Situation Template

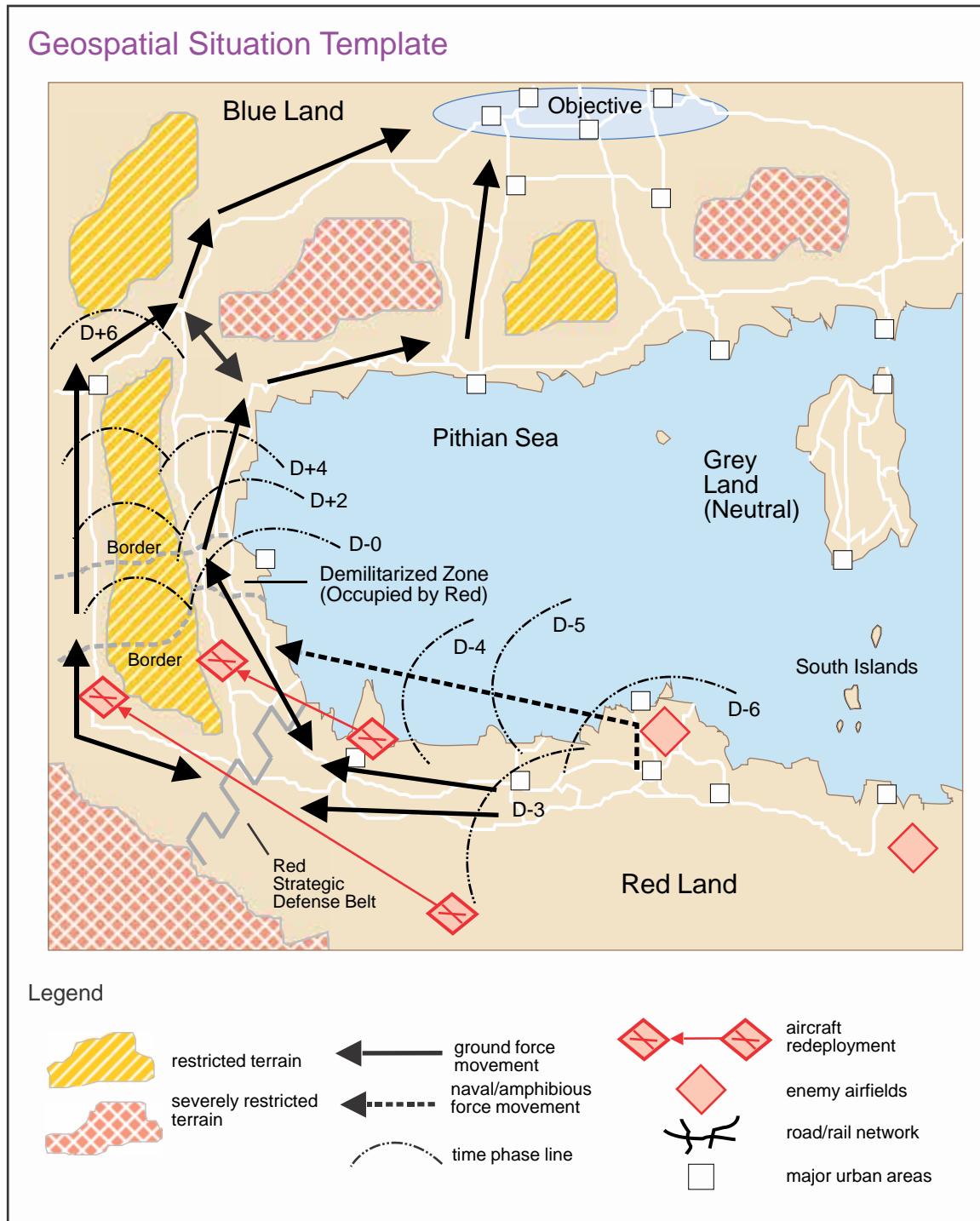
Analyze and wargame the adversary's likely scheme of maneuver from current dispositions to the objective. Identify how each of the adversary's force components fits in and supports the scheme of maneuver. Based on adversary movement doctrine, patterns, and capabilities as well as time and space factors, time phase lines should be placed on the situation template to depict the expected progress of adversary force movements. Modify time phase lines as necessary based on the anticipated effects of friendly military action and the current situation on adversary force movement capabilities (see Figure V-3).

(2) **Systems Perspective.** To construct a situation template relative to a systems perspective, select the adversary template (modified association matrix) appropriate to the COA under consideration. Plot the anticipated node-link changes from the adversary template on an overlay extracted from an appropriate portion of the consolidated network diagram. The anticipated changes (new or modified links) should be distinguished by dotted lines (or other locally established symbology) color coded for each individual COA. The resulting systems situation template is essentially a simplified snapshot of the future depicting the node-link network changes associated with a specific COA (see Figure V-4). Appendix B, "Somalia 1992-1993—A Case Study of Support to Stability Operations and Irregular Warfare," provides a description and historical example of the process for constructing systems situation templates.

(3) Based on the relative complexity of some types of joint operations, some adversary COAs may be better presented in a matrix vice overlay format. A situation matrix may be particularly useful in depicting the phasing of the supporting operations conducted by each of the adversary's force components (see Figure V-5).

b. **COA Description.** Each COA includes a description of the expected activities of the adversary forces depicted on the situation template. This will usually consist of a narrative description that addresses the earliest time the COA can be executed, location of the main effort, supporting operations, and time and phase lines associated with the COA. The assumed critical decisions that the adversary commander will make during the implementation of the COA are described in terms of their location in time and space (decision points) and all relative decision-making criteria.

c. **HVTs.** The decisive points identified during COG analysis, and the HVTs listed on the doctrinal templates associated with each COA, should be refined and reevaluated. The relative worth of each HVT will vary with the specific situation under consideration and over the duration of the COA's execution. Each COA should be mentally wargamed to determine potential deployment locations for each HVT, and the point in time when each target is most valuable to the COA's success. Those areas where the adversary is most likely to deploy HVTs at the time when they are most crucial to the adversary's operation should be identified and passed to the joint force's targeting element. These areas should be designated as target areas of interest (TAIs) and can be annotated on the situation template or maintained on a separate list and overlay.

**Figure V-3. Geospatial Situation Template**

6. Identify Initial Collection Requirements

The identification of initial intelligence collection requirements depends on the prediction of specific activities and the areas in which they are expected to occur which, when observed, will reveal which COA the adversary has adopted. The areas in which

Systems Situation Template

This template depicts anticipated, future changes (new or modified links) within relevant systems that if established may indicate a specific intention or course of action.

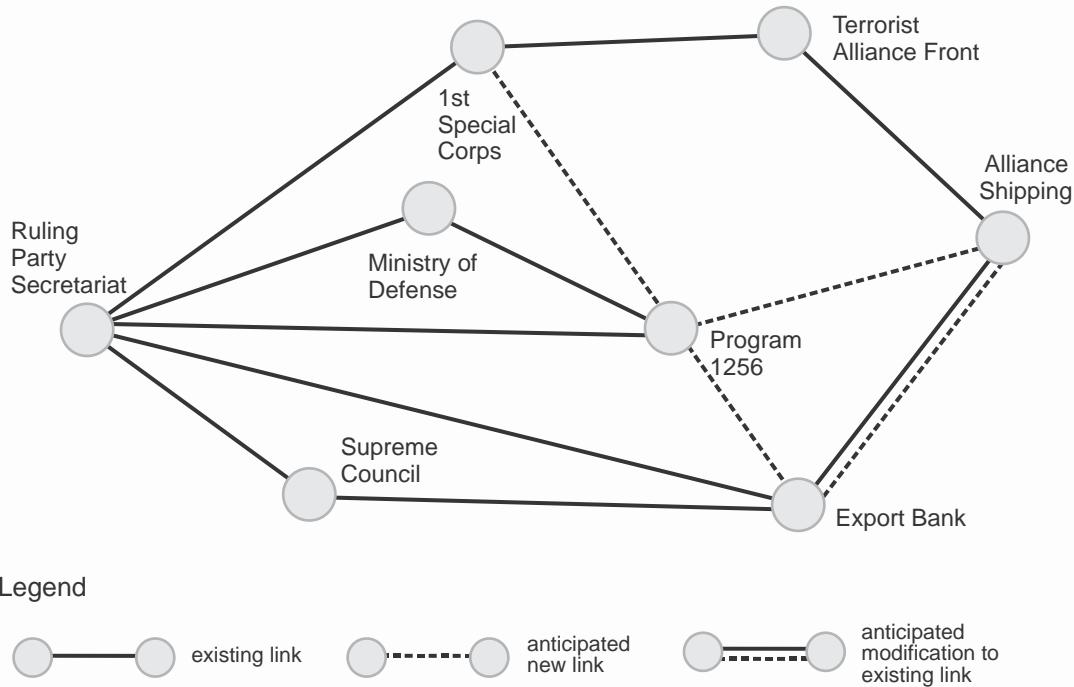


Figure V-4. Systems Situation Template

these activities or indicators are expected to take place are designated as NAIs. The NAIs and their associated indicators are depicted on the event template and event matrix.

a. **The Event Template.** The event template is developed by comparing the analyses depicted on the situation templates for each of the COAs that the adversary is capable of executing (see Figure V-6). The purpose of this comparison is to identify those NAIs that are unique to the adoption of a specific adversary COA or a limited set of COAs. Conversely, those areas and activities that are common to all COAs are eliminated from consideration because they are not useful in differentiating the adoption of one COA over another. The NAIs for all the adversary's COAs are consolidated and depicted on the event template. An NAI can be a specific point, route, area, or network node or link and can match obvious geographic features or arbitrary features such as timed phase lines or engagement areas. They should be large enough to encompass the geospatial activity or network link that serves as the indicator of the adversary's COA (see Figure V-7). Appendix B, "Somalia 1992-1993—A Case Study of Support to Stability Operations and Irregular Warfare," provides a description and historical example of the process for constructing a systems event template.

		Time											
Type	Operation	D-7	D-6	D-5	D-4	D-3	D-2	D-1	D	D+1			
Air		4354th and 4326 Air Wings deploy to demilitarized zone [DMZ] South Airfield.											
Maritime					12th Mobile Missile Brigade deploys to alternate positions.								
Ground			2/3 of Red Fleet redeploys to temporary DMZ naval facility.			Red Fleet screens maritime approaches to DMZ.		Red Fleet commences sea denial operations in the West Pithian Sea.					
Space		Improvements to transportation infrastructure in DMZ.											
Electronic Warfare		4th, 5th, 18th Mech Corps move to DMZ.						ASAT launch					
Cyberspace		Space Launch Vehicle-III with co-orbital antisatellite (ASAT) erected at Launch Site 34 at Red Land Space and Missile Center.						430th Radio Brigade commences jamming activity against Blue DMZ units.					
		430th Radio Brigade continues to jam Radio Free Pithia broadcasts.						Virus attacks against Blue Land logistic systems.					
								Red Land implements new systems security procedures.					

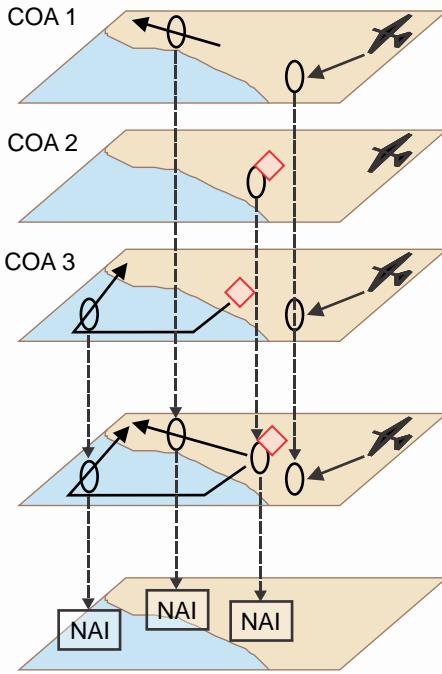
Figure V-5. Situation Matrix

b. **The Event Matrix.** The event matrix supports the event template by providing details on the type of activity expected in each NAI, the times the activity is expected to occur, and the COAs with which the activity is associated. Although the primary purpose of the event matrix is to facilitate intelligence collection planning, it can also serve as a useful aid in situation development and wargaming (see Figure V-8 and Figure V-9).

Constructing an Event Template

The situation templates for each course of action (COA) are combined into a consolidated situation template. Events/links that are common to more than one COA are eliminated. The remaining events/links should be unique to a specific COA and are designated as named areas of interest (NAIs).

Geospatial Perspective



Systems Perspective

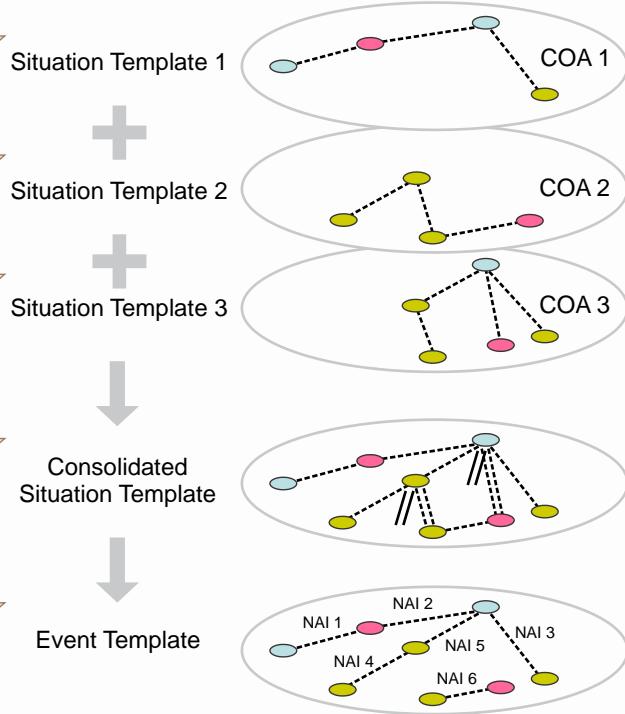
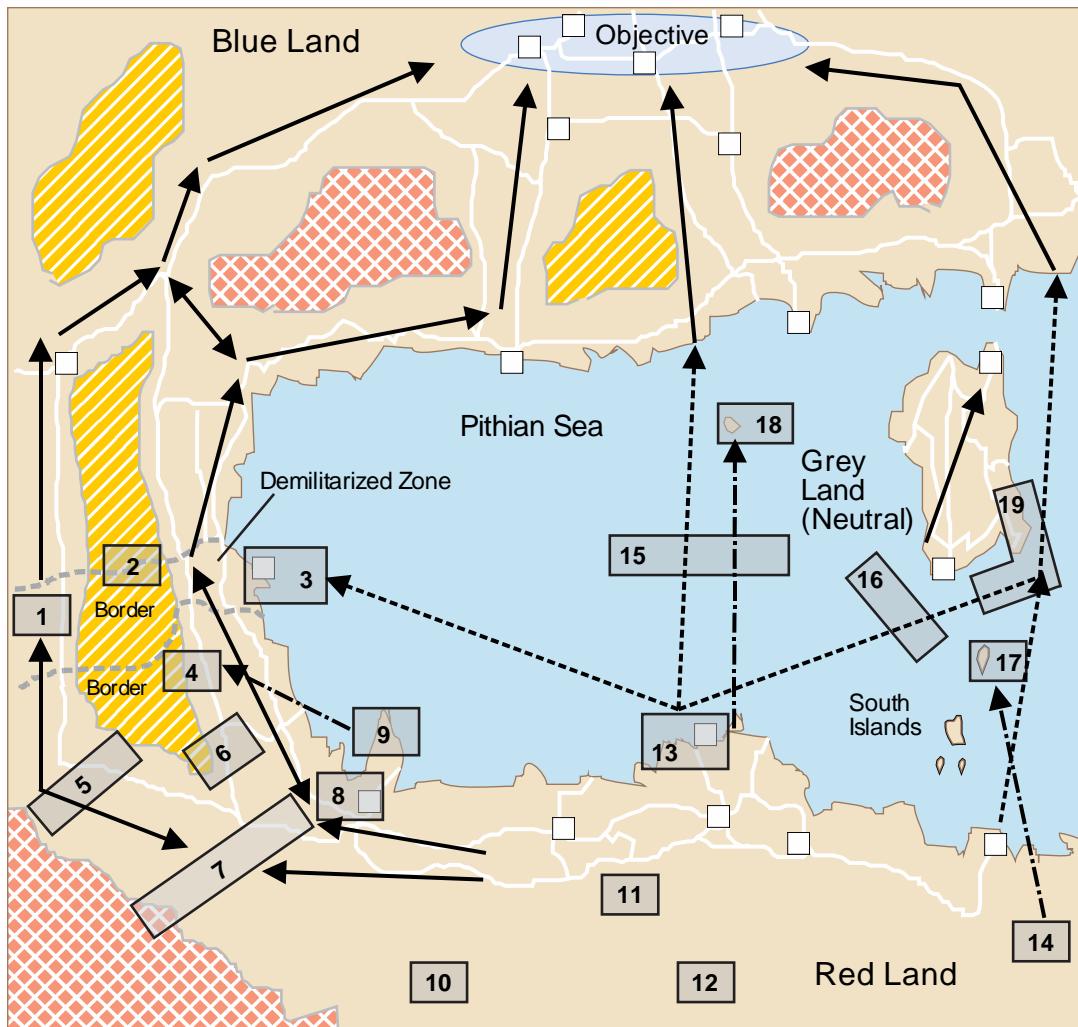


Figure V-6. Constructing an Event Template

Event Template



Legend

- | | | | | | |
|--|-----------------------------|--|-----------------|-----------|------------------------|
| | restricted terrain | | air movement | | road/rail network |
| | severely restricted terrain | | ground movement | # icon"/> | named area of interest |
| | | | naval movement | | major urban area |

Figure V-7. Event Template

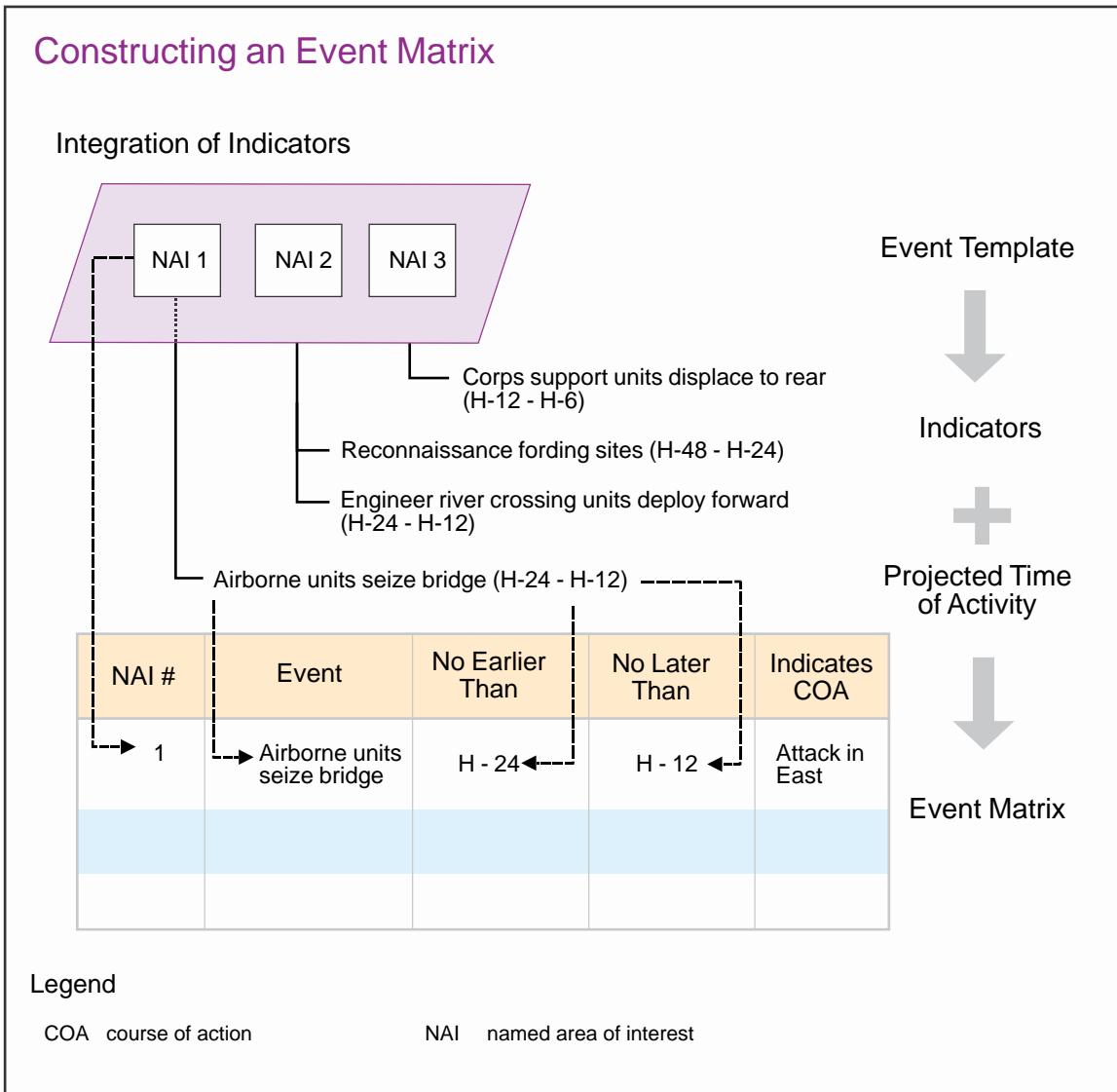


Figure V-8. Constructing an Event Matrix

NAI	Event	Time		Indicate COA
		Earliest	Latest	
1	Laying of minefields and construction of obstacles in depth in the demilitarized zone (DMZ).	D-10	D-0	Defend
2	Improvements to transportation infrastructure in northern DMZ.	D-10	D-1	Attack (in West)
3	Presence of additional surface combatants and minelayers at DMZ port.	D-7	D-3	Reinforce
4	Deployment of additional combat aircraft at forward airfield.	D-7	D-1	Reinforce
5	Northward movement of red corps size force.	D-3	D-1	Attack (in West)
6	Northern movement of two more corps.	D-3	D-1	Attack (in West)
7	Occupation of red strategic defense belt by second echelon units.	D-2	D-1	Retrograde
8	Presence of red surface combatants and minelayers.	D-3	D-1	Retrograde
9	Deployment of additional combat aircraft near red strategic defense belt.	D-7	D-1	Retrograde
10	Departure of mobile missile units from garrison and local dispersal areas.	D-3	D-1	Attack
11	Concentration of additional aircraft at rear airfield.	D-2	D-1	Defend
12	Presence of intermediate-range ballistic missiles on or near launch pad.	D-3	D-1	Attack
13	Departure of surface combatants and amphibious support ships from port.	D-6	D-4	Attack
14	Concentration of additional combat aircraft.	D-2	D-1	Defend
15	Northward transit of amphibious task force.	D-6	D-3	Attack (in Center)
16	Eastward transit of amphibious task force.	D-6	D-4	Attack (in East)
17	Deployment of additional combat aircraft.	D-3	D-1	Attack (in East)
18	Deployment of additional combat aircraft.	D-3	D-1	Attack (in Center)
19	Northward transit of amphibious task force.	D-5	D-4	Attack (in East)

Legend

COA course of action NAI named area of interest

Figure V-9. Event Matrix

CHAPTER VI

SUPPORT TO JOINT OPERATION PLANNING, EXECUTION, AND ASSESSMENT

"A general should say to himself many times a day: 'If the hostile army were to make its appearance to my front, on my right, or on my left, what would I do?' And if he is embarrassed, his arrangements are bad; there is something wrong; he must rectify his mistake."

Napoleon Bonaparte
1769-1821

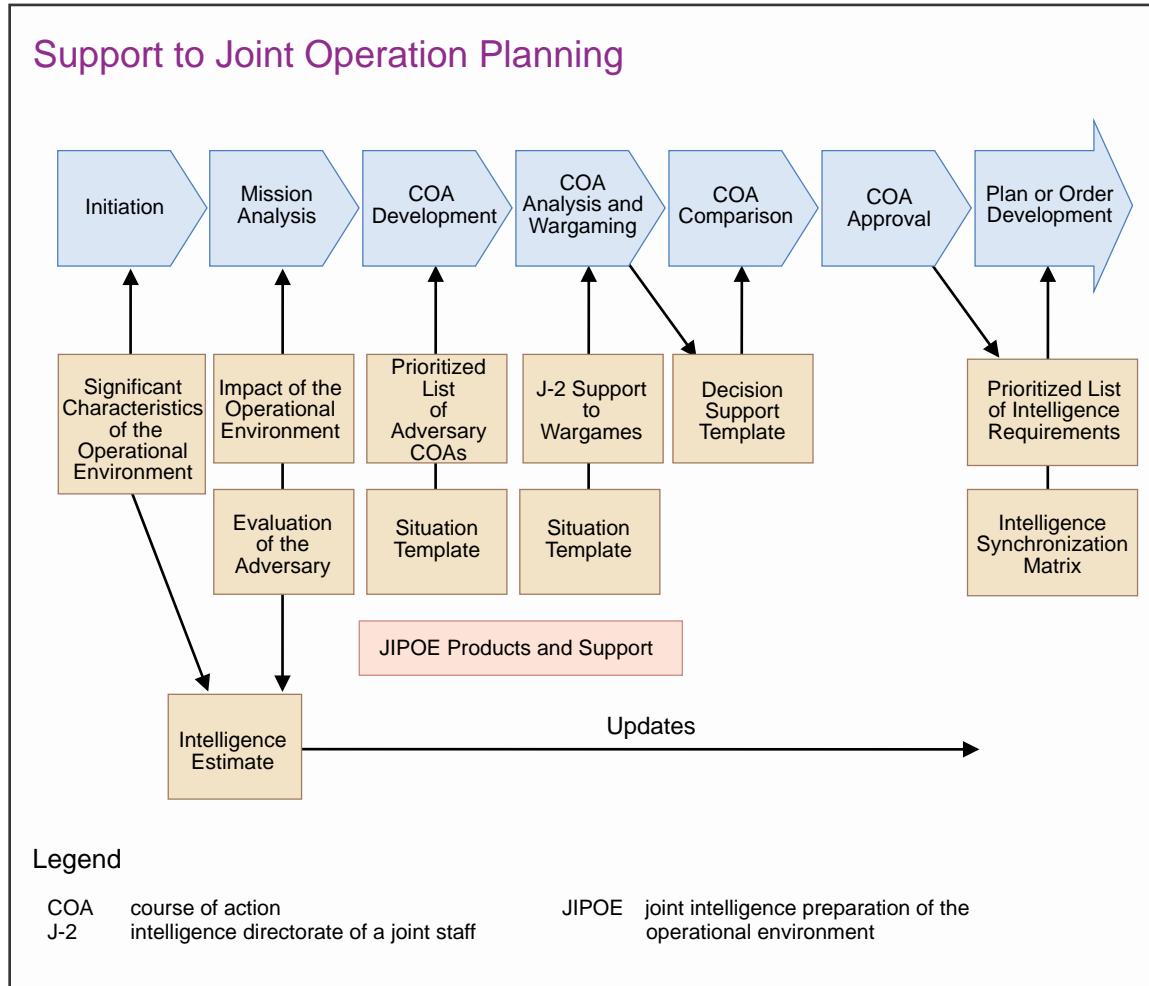
1. Introduction

The primary purpose of JIPOE is to support joint operation planning, execution, and assessment by identifying, analyzing, and assessing the adversary's COGs, critical vulnerabilities, capabilities, decisive points, limitations, intentions, COAs, and reactions to friendly operations based on a holistic view of the OE. JIPOE analysis assists the JFC and joint force staff to visualize and understand the full range of adversary capabilities and intentions. JIPOE analysts identify, describe, and compare the opposing advantages and disadvantages of all relevant aspects of the OE, and assist in determining how to gain strategic or operational advantage and initiative over the adversary. Although JIPOE support is both dynamic and continuous, it must also be "front loaded" in the sense that the bulk of JIPOE analysis must be completed early enough to be factored into the JFC's decision-making effort. Furthermore, prepared or "on the shelf" JIPOE products will provide the foundation on which JIPOE support in a time-constrained environment is based. JFCs and their staffs are responsible for ensuring that all JIPOE products and analyses are fully integrated into the joint force's operation planning, execution, and assessment efforts.

SECTION A. PLANNING

2. Overview

JIPOE supports joint operation planning by identifying significant facts and assumptions about the OE. This information includes details regarding adversary critical vulnerabilities, capabilities, decisive points, limitations, COGs, and potential COAs. JIPOE products are used by the JFC to produce the commander's estimate of the situation and CONOPS, and by the joint force staff to produce their respective staff estimates. Various intelligence products such as the DIA-produced dynamic threat assessment (DTA), baseline JIPOE products, and other locally produced assessments will contribute to developing and enhancing comprehensive intelligence estimates. JIPOE products also help to provide the framework used by the joint force staff to develop, wargame, and compare friendly COAs and provide a foundation for the JFC's decision regarding which friendly COA to adopt. JIPOE support is crucial throughout the steps of JOPP (see Figure VI-1).

**Figure VI-1. Joint Operation Planning**

a. The JIPOE effort should facilitate parallel planning by all strategic, operational, and tactical units involved in the operation. JIPOE products developed to support strategic-level planning should also be simultaneously disseminated to all appropriate operational and tactical headquarters. This is especially true during initial planning periods when headquarters at intermediate echelons may tend to filter information as it travels down to tactical units.

b. The integration of Service component IPB products with the JFCs' JIPOE effort creates a synergy in which an adversary's COAs may provide indicators as to the adversary's overall capabilities, intentions, desired end state, and strategy. Specifically, JIPOE products facilitate operation planning by determining the following:

(1) The mindset, idiosyncrasies, and decision-making patterns of the adversary strategic leadership and field commanders.

(2) The adversary's strategy, intention, or strategic CONOPS, which should include the adversary's desired end state, perception of friendly vulnerabilities, and adversary intentions regarding those vulnerabilities.

- (3) The composition, dispositions, movements, strengths, doctrine, tactics, training, and combat effectiveness of major adversary forces that can influence friendly actions in the theater and operational areas.
- (4) The adversary's principal strategic and operational objectives and lines of operation.
- (5) The adversary's strategic and operational sustainment capabilities.
- (6) COGs and decisive points throughout the adversary's operational and strategic depths.
- (7) The adversary's ability to create effects in the information environment and use or access data from all systems.
- (8) The adversary's regional strategic vulnerabilities.
- (9) The adversary's capability to conduct asymmetric attacks against friendly global critical support nodes (e.g., electric power grids, oil and gas pipelines, pre-positioned supply depots).
- (10) The adversary's intelligence capabilities to collect on and analyze friendly forces.
- (11) The adversary's relationship with possible allies and the ability to enlist their support.
- (12) The adversary's defensive and offensive vulnerabilities in depth.
- (13) The adversary's capability to operate advanced warfighting systems (e.g., smart weapons and sensors) in adverse METOC conditions.
- (14) Key nodes, links, and exploitable vulnerabilities within an adversary system.
- (15) The adversary's WMD or CBRN capabilities and intent.

3. Planning Initiation

- a. JOPP begins when an appropriate authority recognizes a potential for military capability to be employed in response to a potential or actual crisis. At the strategic level, that authority—the President, Secretary of Defense (SecDef), or the Chairman of the Joint Chiefs of Staff (CJCS)—initiates planning by deciding to develop military options. The Joint Strategic Capabilities Plan, and related strategic guidance statements (when applicable), serve as the primary guidance to begin joint operation planning. However, CCDRs and other commanders may initiate planning on their own authority when they identify a planning requirement not directed by higher authority. Military options normally are developed in combination with other nonmilitary options so that the

THE NEED FOR JOINT INTELLIGENCE PREPARATION OF THE OPERATIONAL ENVIRONMENT TO SUPPORT PARALLEL PLANNING

Parallel planning implies concurrent planning and simultaneous coordination among planners from the strategic to the tactical levels. [During Operation RESTORE HOPE], early parallel planning...would have provided access to the strategic aspects of intelligence related to preparation of the battlefield. The information needed by subordinate commanders includes more than classical intelligence data. The operational commander needs a synthesis of data from all...operating systems for his own use and for analysis by the planning staff. This information should not be filtered out between headquarters. It should be flashed to the operational and tactical headquarters simultaneously to facilitate detailed planning at all levels.

**SOURCE: Major General S.L. Arnold, US Army,
Commander 10th Mountain Division,
Army Forces Commander during Operation HURRICANE ANDREW and
Operation RESTORE HOPE
PARAMETERS, Winter 93-94.**

President can respond with all the appropriate instruments of national power. The JFC typically will provide *initial guidance* (not to be confused with the JFC's planning guidance that is a product of mission analysis), which could specify time constraints, outline initial coordination requirements, authorize movement of key capabilities within the JFC's authority, and direct other actions as necessary.

b. A preliminary or abbreviated JIPOE analysis of significant characteristics of the OE should precede and inform the initiation phase of joint operation planning. During the initiation phase, DIA produces a DTA for each top priority plan identified in the *Guidance for Employment of the Force* and continuously updates each DTA as relevant aspects of the OE change. CCMD intelligence analysts accelerate JIPOE step one activities by continuously monitoring the situation, alerting the JFC and staff to developments that may impact the operation planning effort, updating existing JIPOE products, and initiating new intelligence collection or production requirements. Additionally, the JFC may decide to form a JIPOE coordination cell to coordinate support and help analyze the initiating directive to determine time available until mission execution, the current status of JIPOE products and related staff estimates, and other factors relevant to the specific planning situation.

c. Operational design—the conception and construction of the framework that underpins a campaign or major O and its subsequent execution—begins concurrently with JOPP initiation and is an essential activity during mission analysis. During early operational design, the JFC and staff focus on understanding the OE and the nature of the problem the JFC must solve. Through this effort, the JFC and staff develop a broad operational approach—a description of the broad actions the force must take to transform current conditions into those desired as end state. The approved operational approach helps guide subsequent detailed planning. Of particular relevance to operational design is

the J-2's responsibility to lead the staff's effort and manage and develop products that provide a systems understanding of the OE as part of JIPOE. Thus the J-2 is a core player in the early design effort and must be responsive to the commander's operational design priorities. The JFC can help the J-2 by specifying critical information requirements early in the process to focus JIPOE toward specific products that support the design effort. These products help the commander understand how the joint force's actions might affect the relevant political, social, economic, informational, and other factors that comprise the current environment and affect the end state.

4. Mission Analysis

In order for the joint force staff to identify potential COAs, the JFC formulates planning guidance based on an analysis of the friendly mission. This analysis helps to identify specified, implied, and essential tasks, any constraints on the application of military force, the JFC's task and purpose (restated mission), and possible follow-on missions. JIPOE supports mission analysis by enabling the JFC and joint force staff to visualize the full extent of the OE, to distinguish the known from the unknown, and to establish working assumptions regarding how adversary and friendly forces will interact within the constraints of the OE. JIPOE assists JFCs in formulating their PIRs and other planning guidance by identifying significant adversary capabilities and by pointing out critical factors, such as adversary intelligence activities, the locations of key geography, attitudes of indigenous populations, and potential land, air, and sea avenues of approach. Mission analysis and JFC guidance form the basis for the subsequent development of friendly COAs by the joint force staff. It is therefore imperative that an initial version of the impact of the OE, evaluation of the adversary, intelligence collection plan, and adversary COAs be briefed to the JFC at the mission analysis briefing. This is critical to enabling the JFC to provide sufficient guidance for friendly COA development.

5. Course of Action Development

The J-3 and J-5 develop friendly COAs designed to accomplish the joint force's mission within the guidelines established by the JFC. In developing friendly COAs, the J-3 and J-5 take into consideration factors such as relative force ratios, initial force dispositions, and possible schemes of maneuver. The number of friendly COAs developed should remain manageable while still addressing each adversary COA. The J-2 identifies, evaluates, and prioritizes all adversary COAs (JIPOE step four) in sufficient time for them to be integrated into the friendly COA development effort. Additionally, the evaluation of the adversary (JIPOE step three) is used by the J-3 and J-5 to estimate force ratios. The process of estimating force ratios may be complicated due to wide disparities between friendly and adversary unit organization, equipment capabilities, training, and morale. In such situations, the J-2, J-3, and J-5 may choose to develop local techniques and procedures for evaluating adversary units and equipment in terms of friendly force equivalents. The J-3 also depends heavily on JIPOE products prepared during the analysis of the adversary situation and the evaluation of other relevant aspects of the OE in order to formulate initial friendly force dispositions and schemes of maneuver. Additionally, the JIPOE analysis of HVTs is used by the J-3 and J-5 to identify targets whose loss to the adversary would significantly contribute to the success

of a friendly COA. These targets are refined through wargaming and are designated as HPTs. JIPOE also provides significant input to the formulation of deception plans by analyzing adversary intelligence collection and analytical capabilities and activities, and the perceptual biases of adversary decision makers.

6. Course of Action Analysis and Wargaming

All joint force staff sections participate in an analysis of the friendly COAs developed by the J-3 and J-5. The purpose of this effort is to identify any aspects of a particular COA that would make it infeasible, and to determine which COA best accomplishes the joint force's mission. The best method to analyze friendly COAs is through wargaming and the construction of a decision support template.

a. **Wargaming.** Wargaming stimulates thought and provides insight into aspects of the friendly COA that might not otherwise have occurred. It is a conscious attempt to visualize the flow of a military operation, given friendly strengths and dispositions, adversary assets and possible COAs, and a specific OE. It forecasts how the neutralization of specific adversary targets will affect each friendly COA, thereby facilitating the analysis and identification of HPTs. Wargaming attempts to foresee the action, reaction, and counteraction dynamics between a pair of friendly and adversary COAs. It may also reveal gaps in understanding the adversary and other relevant aspects of the OE that help to refine information requirements.

(1) **Preparation for the Wargame.** Wargaming depends to a significant degree on the amount of preparation put into the effort. The following procedures will help maximize the benefits of the wargame:

(a) The amount of time available for wargaming must be determined. If possible, sufficient time should be allocated to wargame each friendly COA against the complete set of all adversary COAs. If time constraints do not permit this, then each friendly COA must, at a minimum, be wargamed against the adversary's most likely COA and most dangerous COA.

(b) Time limits must be established for wargaming each part of the operation. If time limits are not established, the staff may spend too much time wargaming specific aspects of the operation at the expense of others.

(c) The J-2 must ensure that the adversary situation, force dispositions, analysis of HVTs, and adversary doctrinal templates are current prior to the start of wargaming.

(d) Assumptions regarding the OE and adversary must be realistic. Avoid constructing assumptions that are deliberately designed to support premature conclusions or conceptual bias that favors one COA over another. For example, the joint force staff must guard against seizing upon one adversary COA as a "given" simply because it fits preconceived notions or is a "convenient" match for an already favored friendly COA. Rather, the staff should plan to counter *all* adversary COAs identified during the JIPOE process. It is imperative that JFCs and their staffs recognize that the least likely

adversary COA may be the one actually adopted precisely because it is the least likely, and therefore may be intended to maximize surprise.

(e) All known critical events that may require a decision should be identified. Critical events identified before the wargame are usually specified or implied tasks that are essential to mission accomplishment. Other critical events will become apparent during the wargame. The joint force staff should agree to explore and preplan decisions that the JFC might have to make during the operation.

(2) **Conduct of the Wargame.** The wargame should follow a sequence of “action—reaction—counteraction,” in which the J-2/JIOC, or red cell personnel play the roles of adversaries. The side taking the initiative will begin the process by describing the COA. The opposing side will interrupt, as appropriate, to describe their reaction. The initial force will then interrupt the opposition to describe their counteraction. Each interruption represents a decision that must be made by the friendly or adversary commander or staff during the actual execution of the COA. Some basic rules for successful wargaming include the following:

(a) Avoid comparing one COA with another during the wargame. The comparison of friendly COAs should wait until after all COAs have been wargamed.

(b) Each friendly COA should be wargamed first against the adversary’s most likely COA and then against the most dangerous adversary COA. The other adversary COAs should be wargamed in accordance with the JFC’s guidance.

(c) Ensure that each friendly COA remains feasible. If for any reason during the wargame a friendly COA is determined to be infeasible, the wargame should be stopped and that COA should be revised or rejected.

(d) Test the validity of candidate COGs. The defeat, destruction, neutralization, or substantial weakening of a valid COG should cause an adversary to change its COA or prevent an adversary from achieving its strategic objectives. If analysis shows that this does not occur, then perhaps JIPOE analysts have misidentified the COG, and they must revise their COG and critical factors analysis.

(e) The command red team supports wargaming by suggesting alternatives to both red cell and friendly force commanders in order to stimulate critical and creative thought, avoid mirror-imaging and other analytical errors, and identify unseen assumptions, vulnerabilities, and opportunities.

(f) Each interruption in the “action—reaction—counteraction” drill corresponds to a decision that would have to be made by the JFC or the joint force staff. Each time such a decision point is identified during the wargame, it should be recorded on the decision support template. Information required for the JFC to make identified decisions should be determined by the J-3/J-5 and J-2 during the context of wargaming. That information will later form the basis for either friendly force information requirements or PIRs and factored into the decision support template.

b. Decision Support Template. The decision support template (see Figure VI-2) is essentially a combined intelligence estimate and operations estimate in graphic form. It relates the detail contained on the event template (prepared during JIPOE step four) to the times and locations of critical areas, events, and activities that would necessitate a command decision, such as shifting the location of the main effort or redeploying forces.

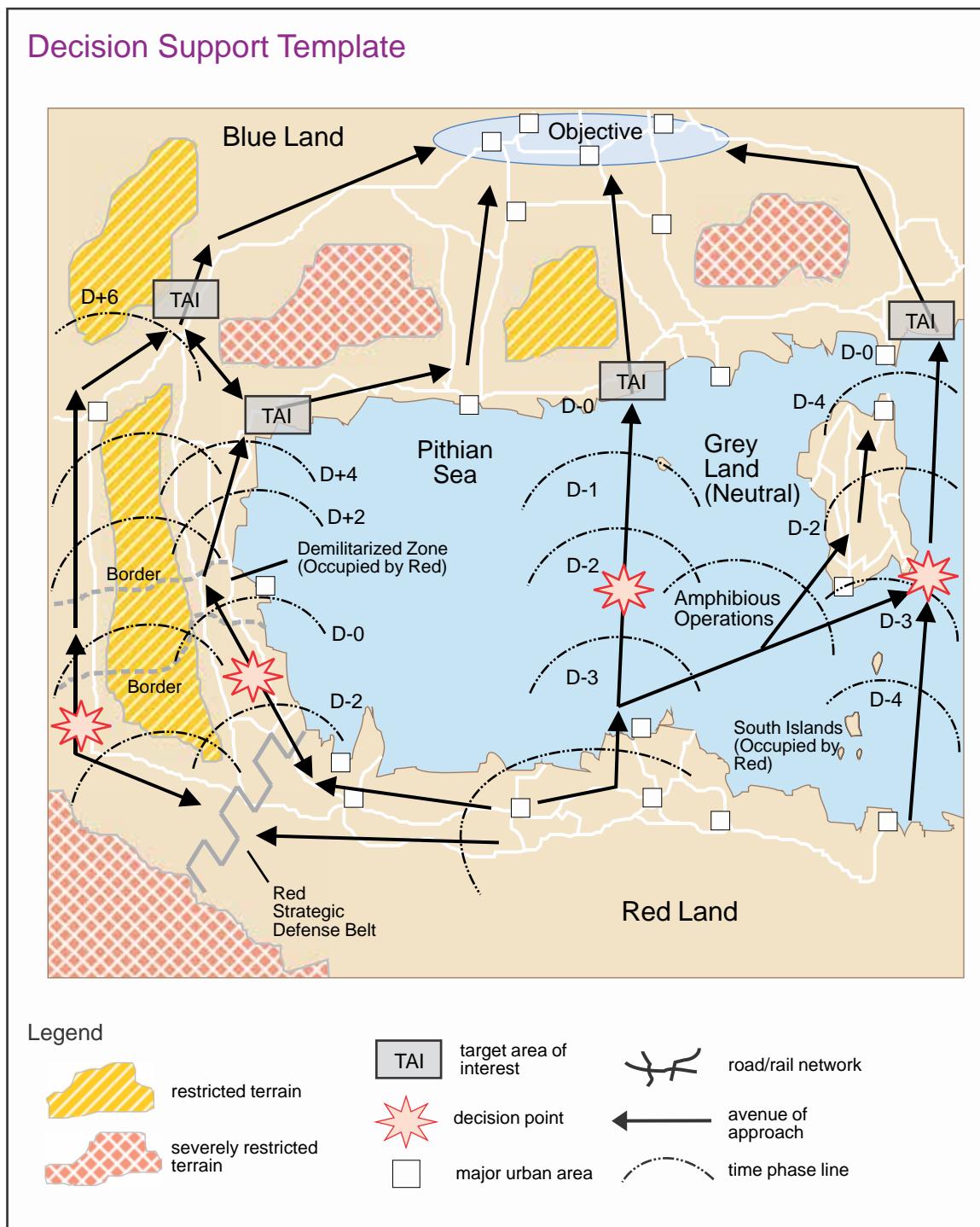


Figure VI-2. Decision Support Template

Although the decision support template does not dictate decisions to the JFC, it is a useful tool for indicating points in time and space (decision points) where action by the JFC may be required. The decision support template is constructed by combining the event template with data developed during the wargame. The J-2, J-3, J-4, J-5, and J-6 collaborate in the production of the decision support template, which is fully coordinated with all joint force staff elements. The decision support template displays TAIs, avenues of approach, objectives, and time phase lines derived from the JIPOE event template.

(1) **TAIs.** Each of the TAIs identified during the fourth step of JIPOE are displayed on the decision support template. Each of these locations is associated with a corresponding decision point that, if activated, will confirm the adversary's intention to move into the TAI. This relationship is crucial and mirrors the relationship between intelligence and operations. Thus, intelligence collection against the decision point is designed to provide the J-3 with the necessary tip-off information to engage the adversary force in the TAI.

(2) **Decision Points.** A decision point is a point in space and time when the commander or staff anticipates making a key decision concerning a specific COAs. A decision point should be located to provide sufficient time for friendly forces to engage the adversary in a specific TAI. The locations of decision points depend both on the availability and response time of friendly forces as well as the anticipated activity, capabilities, and movement rates of adversary forces. The J-2 will assist the J-3 and J-5 in identifying decision points that support the overall CONOPS. Both staff elements must work together to ensure that the distance between decision points and their associated TAIs permit sufficient time to synchronize friendly actions before the adversary reaches the engagement area. Specifically, the distance between a decision point and its associated TAI must permit sufficient time and space for:

- (a) The collection of intelligence confirming that the anticipated adversary activity has occurred at the decision point.
- (b) The processing and dissemination of this intelligence to the JFC.
- (c) The preparation and movement of friendly forces to engage the adversary in the TAI.
- (d) The movement of the adversary from the decision point to the TAI.

7. Course of Action Comparison

Following wargaming, the staff compares friendly COAs to identify the one that has the highest probability of success against the full set of adversary COAs as depicted on the decision support template. Each joint force staff section uses different criteria for comparing friendly COAs, according to their own staff area of expertise. For example, the J-3 and J-5 compare friendly COAs based on the friendly force's ability to defeat each adversary COA, whereas the J-2 assesses the overall capabilities of intelligence collection and production to support each friendly COA. Additionally, each staff section

must ensure that they have fully considered the JFC's initial planning guidance for COA selection.

8. Course of Action Approval

After comparing friendly COAs, each joint force staff element presents its findings to the remainder of the staff. Together they determine which friendly COA they will recommend to the JFC. The J-3 then briefs the COAs to the JFC using graphic aids, such as the decision support template and matrix. The JFC decides upon a COA and announces the CONOPS.

9. Plan or Order Development

Using the results of wargaming associated with the selected COA, the joint force staff prepares plans and orders that implement the JFC's decision. The J-2 prioritizes intelligence requirements and synchronizes intelligence collection requirements to support the COA selected by the JFC.

a. **Prioritization of Intelligence Requirements.** The J-2 uses the JFC's CONOPS and the results of the wargame to refine the initial set of intelligence requirements developed during step one of the JIPOE process. The J-2 should analyze the specific types of adversary activity that are expected to occur at each decision point. These indicators provide the basis for tailoring the list of intelligence requirements to support the COA selected by the JFC. The J-2 prioritizes the list of intelligence requirements and develops a synchronization matrix which reflects the collection, processing, and production of intelligence required to support the decision-making process.

b. **Synchronization of Intelligence Collection.** The J-2 must direct the intelligence collection effort, receive the information it produces, process it, and then produce and disseminate the relevant intelligence in time to support the JFC's decision-making requirements. The coordination of this entire process is known as intelligence synchronization. In order to collect and provide in a timely manner all the intelligence required to support the friendly COA, an intelligence synchronization matrix may be designed (see Figure VI-3). The J-2 constructs the intelligence synchronization matrix by establishing intelligence collection deadlines for satisfying each intelligence requirement. The J-2 bases these deadlines on the decision-making timeline requirements of the JFC and the joint force's planning staff, also factoring in the time required to process, exploit, and disseminate the resulting information. The J-2 then develops a collection strategy to determine which intelligence disciplines can be applied to satisfy information requirements. This collection strategy is depicted on the intelligence synchronization matrix. The collection strategy should consider:

- (1) Collection, processing, exploitation, and dissemination systems capabilities and availability at all levels: tactical, operational, strategic, and national.
- (2) Tasking timelines associated with each collection system or discipline.
- (3) Collection and processing timelines.

Timeline		D-2		D-1		D-0		D+1	
		2400	1200	2400	1200	2400	1200	2400	1200
PIR No:	PIR 1				PIR 2/3		PIR 4		
IR No:	IR 1/2			IR 3				IR 4/5	
GEOINT	X						X		
SIGINT				X	X		X		
HUMINT	X							X	
MASINT	X							X	
TECHINT				X			X		
OSINT	X						X		
CI				X	X				

Legend

CI	counterintelligence	OSINT	open-source intelligence
GEOINT	geospatial intelligence	PIR	priority intelligence requirement
HUMINT	human intelligence	SIGINT	signals intelligence
IR	information requirement	TECHINT	technical intelligence
MASINT	measurement and signature intelligence		

Figure VI-3. Intelligence Synchronization Matrix

- (4) Exploitation timelines.
- (5) Dissemination timelines.
- (6) Type of target or activity collected against.
- (7) Location of the NAI collected against.
- (8) Timelines associated with the expected adversary activity.
- (9) Competing collection requirements.

SECTION B. EXECUTION

10. Overview

Execution begins when the President decides to use a military option to resolve a crisis. Only the President or SecDef can authorize the CJCS to issue an execute order (EXORD). The EXORD directs the supported commander to initiate military operations, defines the time to initiate operations, and conveys guidance not provided earlier. The CJCS monitors the deployment and employment of forces and advises the SecDef on actions to resolve shortfalls and the actions needed to ensure successful completion of military operations. Execution continues until the operation is terminated or the mission is accomplished or revised. JIPOE support is a particularly important prerequisite for military success throughout all phases of a joint operation regardless of how the battle evolves (see Figure VI-4).

a. The purpose of phasing is to help the JFC organize operations by integrating and synchronizing subordinate operations. Phasing helps JFCs and staffs visualize and think through the entire operation or campaign and to define requirements in terms of forces, resources, time, space, and purpose. Phases are distinct in time, space, and/or purpose from one another, but must be planned in support of each other and should represent a natural progression and subdivision of the campaign or operation. From a strategic perspective, a joint operation can be described using the six primary phases depicted in Figure VI-4 and discussed later in this chapter. The activities that predominate during a

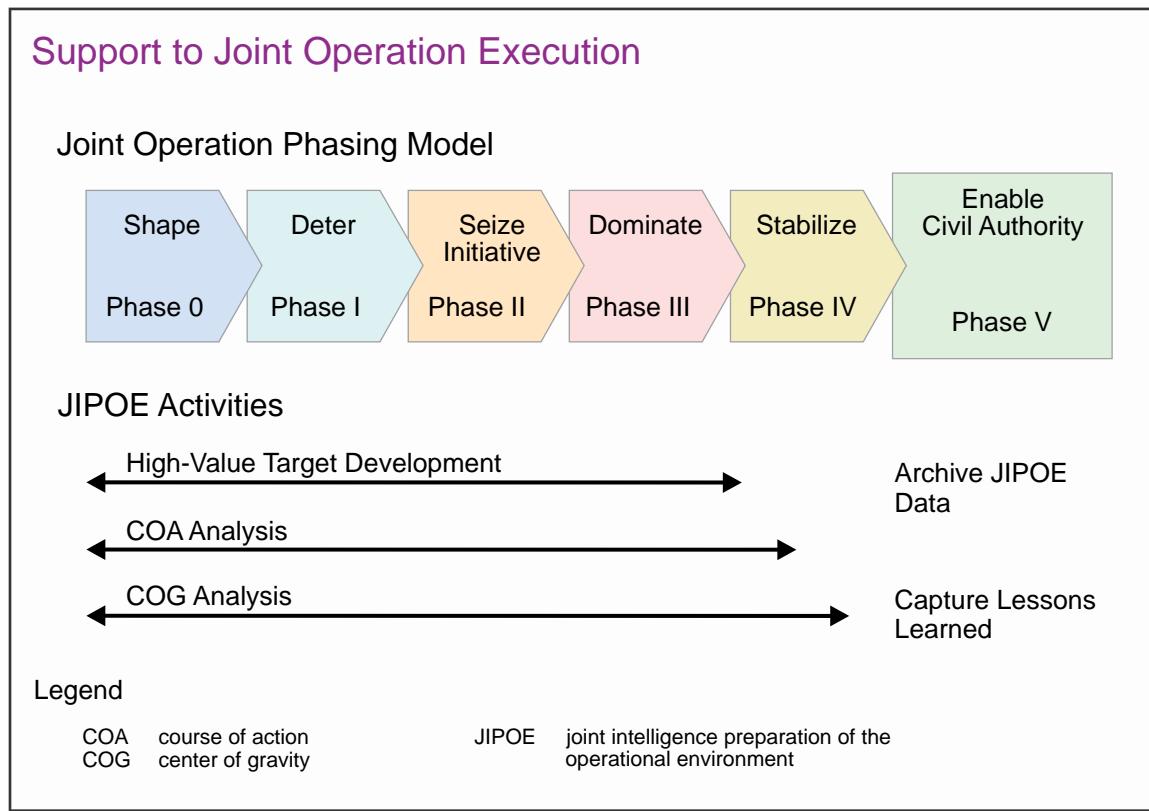


Figure VI-4. Support to Joint Operation Execution

given phase, however, rarely align with neatly definable breakpoints. The need to move from one phase into another is normally identified by assessing that a set of objectives are achieved or that the enemy has acted in a manner that requires a major change in focus for the joint force and is therefore usually event driven, not time driven. Within the context of these phases established by a higher-level JFC, subordinate JFCs and component commanders may establish additional phases that fit their CONOPS. For example, the joint force land component commander (JFLCC) or a subordinate commander might have the following four phases inside the CCDR's seize initiative phase: deploy, forcible entry, defense, and offense. The JFLCC could use the offense sub-phase as a transition to the CCDR's dominate phase.

b. During execution, the JIPOE effort must stay at least one step ahead of operations by simultaneously supporting the current phase of the operation and laying the informational groundwork required for subsequent phases. JIPOE analysts must continuously evaluate how the execution of each operation phase may require the modification of preplanned intelligence collection and production requirements and CI activities. Optimizing the use of limited intelligence collection assets and maximizing the efficiency of intelligence production resources require constant anticipation of operational change by JIPOE planners.

c. JIPOE also supports operation order execution by continuously identifying and evaluating the adversary's strategic and operational COGs. Identification of adversary COGs requires detailed knowledge and understanding of how opponents organize, fight, conduct intelligence, and make decisions, and their physical strengths and weaknesses. However, COGs can change during the course of an operation, and at any given time COGs may not be apparent or readily discernible. COGs can change during the course of an operation for a variety of reasons. For example, during the deter phase, the adversary's operational COG may be its preponderance of hardened, long range artillery sites. However, if hostilities commence and the objective changes from deterring an attack to defeating the adversary's maneuver units, the operational COG may change to the adversary's armored exploitation force. JIPOE analysts alert JFCs and their subordinates to circumstances that may cause COGs to change, thereby enabling the JFC to adjust friendly operations or COAs accordingly. Given their potentially transient nature, adversary COGs should be continuously reevaluated by JIPOE analysts throughout a joint operation.

11. Shape Phase

Before committing forces, JFCs are able to take actions to help shape the character of potential future operations. In many cases, these actions blind or exploit an adversary's intelligence, enhance bonds between future partner nations, increase understanding of the region, help ensure access when required, strengthen future multinational operations, and prevent crises from developing. Intelligence activities conducted during the shape phase help lay the groundwork for the JIPOE effort in all subsequent phases of the operation. Specifically, the JIPOE effort during the shape phase should focus on OE characterization and initial target development resulting in target lists and target material production, identification of adversary COGs, vulnerabilities and susceptibilities to IO,

key nodes, LOCs, and potential adversary COAs that would deny friendly access to bases and lodgment areas. A no-strike list and restricted target list should also be developed during target identification and analysis. Early identification of targets is a critical factor in friendly COA development. Whenever possible, HN and multinational participation in the JIPOE effort should be encouraged.

12. Deter Phase

Before the initiation of hostilities, the JFC should work to gain a clear understanding of the national and military strategic objectives; desired and undesired effects; actions likely to create those effects; COGs and decisive points; and required joint, multinational, and nonmilitary capabilities matched to available forces. The J-2 assists the JFC in visualizing and integrating relevant considerations regarding the OE into a plan that will lead to achievement of the objectives and accomplishment of the mission. During the deter phase, the ongoing JIPOE effort is accelerated to focus on monitoring the current situation while simultaneously assessing adversary capabilities to affect subsequent phases of the operation. JIPOE analysts support indications and warning by looking for specific indications of imminent adversary activity that may require an immediate response or an acceleration of friendly decision-making processes. JIPOE efforts also concentrate on confirming adversary COGs and support the continuous refinement of estimates of adversary capabilities, dispositions, intentions, and probable COAs within the context of the current situation. At the same time however, JIPOE analysts must look ahead to prepare threat assessments that support planning for operations in subsequent phases.

13. Seize Initiative Phase

As operations commence, the JFC needs to exploit friendly asymmetric advantages and capabilities to shock, demoralize, and disrupt the enemy immediately. The JFC seeks decisive advantage through the use of all available elements of combat power to seize and maintain the initiative, deny the enemy the opportunity to achieve its objectives, and generate in the enemy a sense of inevitable failure and defeat. Additionally, the JFC coordinates with the appropriate interagency representatives through a joint interagency task force, JIACG, or individually to facilitate coherent use of all instruments of national power in achieving national strategic objectives. During this phase, JIPOE analysts focus on adversary capabilities that may impede friendly force deployment from bases to ports of embarkation to lodgment areas. Additionally, the JIOC red team may use a “reverse JIPOE” process to analyze the friendly force from the adversary’s perspective, identify potential indicators of friendly COAs, and provide insight into the possible times and locations of the adversary’s intelligence collection plan. This insight assists deception planners in determining the best times and locations to plant deceptive information designed to mislead adversary intelligence analysts. The JIPOE effort is also crucial to intelligence collection planning and the formulation of an optimal collection strategy. JIPOE products such as the event template and matrix help collection planners concentrate collection assets at the correct time and location to detect anticipated adversary activity. CI analysis of adversary intelligence activities and capabilities

enables efforts to detect, identify, assess, exploit, counter, or neutralize adversary intelligence to support this phase.

14. Dominate Phase

During the dominate phase, operations should be designed to: support the JFC's objectives; obtain the highest probability of success; mitigate risk to the force and mission to an acceptable level; place the force in the best posture for future operations; and provide the flexibility to meet unexpected threats and opportunities. JFCs conduct sustained combat operations by simultaneously employing conventional, SOF, and information-related capabilities throughout the breadth and depth of the operational area. CMO are executed to preclude civilian interference in attainment of operational objectives or to remove civilians from operational areas. Some missions and operations are executed concurrently with other combat operations to deny the enemy sanctuary, freedom of action, or informational advantage. JFCs may design operations to cause the enemy to concentrate their forces, thereby facilitating their attack by friendly forces, or operations may be designed to prevent the enemy from concentrating their forces, thereby facilitating their isolation and defeat in detail. Operations may be linear (i.e., combat power is directed toward the enemy in concert with adjacent units) or nonlinear (i.e., forces orient on objectives without geographic reference to adjacent forces). During this phase, the JIPOE effort must be equally prepared to support linear and nonlinear operations. The complexity of nonlinear operations places a premium on a continuous flow of accurate and timely intelligence to help protect individual forces and support precise targeting. JIPOE also provides JFCs and component commanders with assessments of an enemy's capability, willingness, and intent to employ WMD, which can quickly change the character of an operation or campaign, threaten the cohesion of alliances and coalitions, and cause large-scale shifts in strategic and operational objectives, phases, and COAs. These assessments should identify known and suspected locations of enemy WMD stockpiles and delivery systems, anticipate the conditions under which the enemy is most likely to use WMD, and analyze the effects of WMD use on the OE. Intelligence must not only support operations during the dominate phase, but also anticipate and address the information requirements for the subsequent stabilize phase. For example, JIPOE analysts support target development by identifying the adversary's key infrastructure. This analysis should include consideration of what specific infrastructure will be required in the post-combat period to meet the requirements of the stabilize and enable civil authority phases. These infrastructure targets may warrant attack by nonlethal means in order to avoid the impact of their permanent damage or destruction on friendly operations. Additionally, JIPOE analysts must be prepared to assist the JFC in determining how to fill the power vacuum after the conclusion of sustained combat operations. In order to set the groundwork for stability operations, the JFC will require detailed intelligence regarding the status of key infrastructure, enemy government organizations and personnel, and anticipated humanitarian needs.

15. Stabilize Phase

Stabilization typically begins with significant military involvement to include some combat, then moves increasingly toward enabling civil authority as the threat wanes and civil infrastructures are reestablished. As progress is made, military forces increase their focus on supporting the efforts of HN authorities, USG departments and agencies, IGOs, and/or NGOs. During the stabilize phase, particular attention should be paid to identifying and assessing the leaders of groups (e.g., insurgent groups, criminal elements, terrorist cells) posing potential threats to civil authority and reconstruction efforts. JIPOE products should also identify critical infrastructure and analyze its vulnerability to disruption by elements hostile to stabilization efforts. Additionally, JIPOE analysts help military information support (MIS) forces assess the effectiveness of MISO, a critical aspect of stabilization, in changing the behavior of the local populace to support civil authorities and reconstruction efforts.

16. Enable Civil Authority Phase

This phase is characterized by the establishment of a legitimate civil authority that is enabled to manage the situation without further outside military assistance. In many cases, the US will transfer responsibility for the political and military affairs of the HN to another authority. The joint operation normally is terminated when the stated military strategic and/or operational objectives have been met and redeployment of the joint force is accomplished. Before the operation is terminated, it is important that all intelligence lessons learned are recorded in appropriate databases and are captured in joint doctrine. Likewise, the J-2 should ensure that all JIPOE products are appropriately archived. This material may prove valuable to operation planning in the event US or multinational forces are directed to redeploy to the area.

SECTION C. ASSESSMENT

17. Overview

Assessment is a continuous process that measures the overall effectiveness of employing joint force capabilities during military operations. Commanders continuously assess the OE and the progress of operations, and then compare them to their initial vision and intent. Commanders and their staffs determine relevant assessment actions and measures during planning. They consider assessment measures as early as mission analysis, and include assessment measures and related guidance in commander and staff estimates. They use assessment considerations to help guide operational design in order to improve the sequence and type of actions along lines of operation. Assessment actions and measures help commanders adjust operations and resources as required, determine when to execute branches and sequels, and make other critical decisions to ensure current and future operations remain aligned with the mission and desired end state. Assessment occurs at all levels and across the entire range of military operations. Strategic- and operational-level assessment efforts concentrate on broader tasks, objectives, the conditions necessary to achieve objectives, and progress toward the end state, while tactical-level assessment focuses on task accomplishment. Even in operations that do not

include combat, assessment of progress is just as important and can be more complex than traditional combat assessment. Finally, assessment data provides the rationale for institutional and programmatic changes at the Service levels. The JIPOE process supports assessment by helping the commander and staff decide what aspects of the OE to measure and how to measure them to determine progress toward accomplishing tasks, and setting conditions necessary to achieve an objective. Specifically, JIPOE supports assessment by establishing baselines, tracking key conditions related to measures of effectiveness (MOEs), analyzing COAs, identifying COGs and decisive points, nominating and monitoring HVTs, and establishing measures of adversary activities (indicators) associated with a specific COA or reaction to friendly operations related to MOEs (see Figure VI-5).

18. Assessment Process

a. The assessment process uses measures of performance (MOPs) to evaluate task performance at all levels of warfare, and MOEs to determine progress of operations toward achieving objectives. MOPs are used to measure task accomplishment, and answer the question: was the action taken and were tasks completed to standard? MOEs are used at the strategic, operational, and tactical levels to assess changes in adversary behavior, capabilities, or the OE. The JFC also can use MOEs to determine progress toward success in those operations for which tactical-level combat assessment ways,

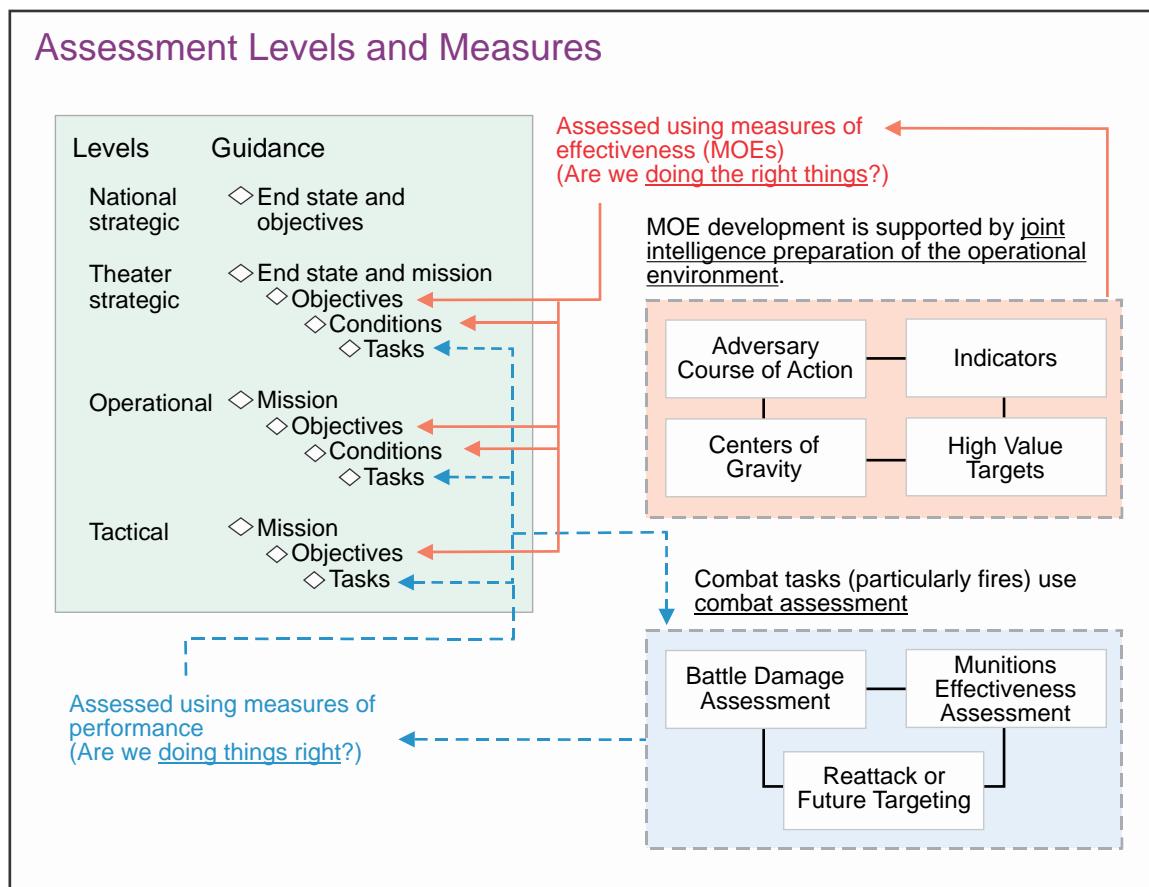


Figure VI-5. Assessment Levels and Measures

means, and measures do not apply. MOEs help answer questions such as, are we doing the right things, are our actions contributing to the conditions necessary to achieve the objective, or are alternative actions required? Well-devised measures can help the commanders and staffs understand the relationship between specific actions and resulting effects. Both MOPs and MOEs can be quantitative or qualitative in nature, but meaningful quantitative measures are preferred because they are less susceptible to subjective interpretation. MOEs are based on observable and measurable indicators. Indicators provide evidence that a certain condition exists or certain results have or have not been attained, and enable decision makers to assess progress toward the achievement of the objective. Several indicators may make up an MOE, just like several MOEs may assist in measuring progress toward achievement of an objective. Both MOPs and MOEs should be developed as early as possible to ensure that data collection can be optimized during the entire course of the operation.

b. The assessment process and related measures should be **relevant, measurable, responsive, and resourced** so there is no false impression of accomplishment.

(1) **Relevant.** MOPs and MOEs should be relevant to the task, effect, operation, the OE, the end state, and the commander's decisions. This criterion helps avoid collecting and analyzing information that is of no value to a specific operation. It also helps ensure efficiency by eliminating redundant efforts.

(2) **Measurable.** Assessment measures should have qualitative or quantitative standards they can be measured against. To effectively measure change, a baseline measurement should be established prior to execution to facilitate accurate assessment throughout the operation. JIPOE provides continuous updates to these baselines related directly to the conditions being measured.

(3) **Responsive.** Assessment processes should detect situation changes quickly enough to enable effective response by the staff and timely decisions by the commander. The JFC and staff should consider the time required for an action or actions to produce desired results within the OE and develop indicators that can respond accordingly. Many actions directed by the JFC require time to implement and may take even longer to produce a measurable result.

(4) **Resourced.** To be effective, the assessment must be adequately resourced. Staffs should ensure resource requirements for data collection efforts and analysis are built into plans and monitored. Effective assessment can help avoid both duplication of tasks and unnecessary actions, which in turn can help preserve combat power.

The assessment process is explained in greater detail in JP 3-60, Joint Targeting, JP 3-0, Joint Operations, and JP 5-0, Joint Operation Planning.

19. Support to Assessing Performance

The results of tactical tasks are often physical in nature, but also can reflect the impact on specific functions and systems. Tactical-level assessment may include assessing progress by phase lines; neutralization of enemy forces; control of key terrain,

people, or resources; and security or reconstruction tasks. Combat assessment is an example of a tactical-level assessment and is a term that can encompass many tactical-level assessment actions. Combat assessment typically focuses on determining the results of weapons engagement (with both lethal and nonlethal capabilities), and thus is an important component of joint fires and the joint targeting process. It helps the CCDR, the subordinate JFC, and component commanders understand how the joint operation is progressing and assists in shaping future operations. JIPOE analysts help assess task accomplishment by supporting the three components of combat assessment (battle damage assessment, munitions effectiveness assessment, and future targeting and reattack recommendations). At the strategic and operational levels, JIPOE products provide much of the substantive baseline analysis and characterization of systems and functional capabilities required for target system analysis and task assessment. At the operational level, the JIPOE process supports target development by determining the anticipated times and locations where adversary targets are expected to appear. At the tactical level, JIPOE support may also include analysis of specific target composition and vulnerability. This data enables target systems analysts to develop the specific battle damage indicators and MOPs to assess task accomplishment.

For further information on combat assessment, see JP 3-60, Joint Targeting, and JP 5-0, Joint Operation Planning.

20. Support to Assessing Effectiveness

JIPOE analysts support assessment by analyzing adversary capabilities, vulnerabilities, and intentions, and by continuously monitoring the numerous aspects of the OE that can indicate the effectiveness of friendly operations. JIPOE analysts help identify potential desired and undesired consequences of friendly actions, how those consequences affect the conditions necessary to achieve the objective, and the development of related MOEs by analyzing adversary COAs, COGs, key nodes and links, and other significant characteristics of the OE as they relate to the friendly mission, end state, and objectives. JIPOE analysts provide objective assessments that gauge the overall impact of military operations against adversary forces and estimate likely adversary reactions and counteractions. JIPOE products, supplemented by the use of alternative analysis to critically examine the MOE from the adversary's perspective, help ensure the JFC is measuring the "important things." The JIPOE process is particularly valuable in identifying and developing indicators (which are the foundation of MOEs) to monitor changes in adversary system behavior, capabilities, or the OE. These indicators help JFCs, their staffs, and component commanders determine if the joint force is "doing the right things" to achieve objectives, not just "doing things right."

- a. As discussed in Chapter V, "Determine Adversary and Other Relevant Actor Courses of Action—Step 4," indicators are associated with an adversary's adoption of a specific COA and are based on adversary doctrine (or observation of past practices) as modified by the physical constraints imposed by the OE. Indicators should also be developed (time permitting) for the various branches and sequels associated with each COA. The actions associated with these branches and sequels are graphically depicted on a series of situation templates which are in turn consolidated into an event template and

matrix. The event matrix summarizes the anticipated events in time and space that would indicate changes in adversary behavior, systems, or the OE in response to friendly military operations. Additional refinement of these events results from the wargaming effort during joint operation planning. These events, or indicators of change, may be assigned qualitative or quantitative thresholds and are used to support the development of MOEs.

b. The JIPOE process enables real-time, persistent surveillance of indicators associated with MOEs. It does this by helping to focus the joint force's intelligence resources at the times and locations most likely to detect adversary activity relevant to assessment (i.e., adversary adoption of branches or sequels in reaction to friendly operations). JIPOE analysts work directly with planners to establish information requirements related to MOEs. They work with intelligence collection managers to design collection priorities, strategies, and plans. JIPOE analysts receive collected information and provide continuous assessment updates to the JFC and staff based on the status of MOE-related indicators.

c. Another aspect of assessment focuses on gauging the effectiveness of the JFC's operational approach. During assessment planning and execution, the staff must look for opportunities and be alert to unforeseen challenges that suggest that the current mission may require revision and that a different operational approach may be required to attain the desired end state. They should also look for indicators that the desired end state is not attainable or no longer desirable. Subsequently, these circumstances may result in a reframing of the problem and the development or execution of a branch plan or new COA. Significant changes could cause the JFC to alter the operational approach or present an entirely new operational approach. The staff structures new MOEs to identify a condition in the OE that has changed or that is better understood. Some of these MOEs could be included in the commander's critical information requirements if required.

d. Redesigned MOEs typically orient on the OE's key nodes, relationships, capabilities, enablers, and actions of relevant actors, all of which might affect the fundamental components of the operational approach. Examples of such information include the following:

- (1) Changes in the original problem statement.
- (2) Significant changes in the enemy composition.
- (3) Significant changes in the expected enemy approach.
- (4) Significant changes in friendly capability.
- (5) Higher headquarters policy changes or directives that change the desired end state.
- (6) Unexpected friendly progress toward objectives.
- (7) Shifts in international support and/or domestic will.

(8) Key assumptions that prove to be invalid.

e. The J-2 has an important role in helping the J-3 and J-5 develop or redesign MOEs, determine relevant and available ways and means for their assessment, and interpret the results. Some of these MOEs will necessarily focus on nodes and links outside the adversary's military system, requiring the J-2's interpretation of second- and third-order effects in order to anticipate the adversary's potential reaction to events.

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CHAPTER VII

SPECIAL CONSIDERATIONS

"Not a Frenchman then doubted that such rapid victories must have decided the fate of the Spaniards. We believed, and Europe believed it too, that we had only to march to Madrid to complete the subjection of Spain...The wars we had hitherto carried on had accustomed us to see in a nation only its military forces and to count for nothing the spirit which animates its citizens."

Napoleonic soldier on the French occupation of Spain and subsequent Spanish insurgency, 1808

1. Introduction

In its most basic sense, the JIPOE process simply combines an understanding of the constraints and influences imposed by the OE with the normal *modus operandi* of an adversary or relevant actors in order to forecast that adversary's or actors' future actions. This basic JIPOE process is relevant throughout the range of military operations. However, some types of missions, operations, and situations may require a more tailored JIPOE approach that places greater emphasis on specific aspects of the OE. For example, stability operations, counterterrorism, counterinsurgency, and IW require an approach that places far greater emphasis on SCA—a better understanding of the civil population and critical infrastructure. Likewise, the contribution of the JIPOE effort to countering asymmetric approaches requires techniques and products that are specifically tailored to the types of joint operations capable of defending against and defeating asymmetric threats. This chapter discusses *some* of the special considerations, procedures, and types of products that JIPOE planners and analysts may find useful in specific situations. The discussion is intended only as a point of departure for JIPOE analysts to further develop specific techniques and products based on their initiative, imagination, and innovation.

SECTION A. SUPPORT DURING IRREGULAR WARFARE

2. Overview

JP 1, *Doctrine for the Armed Forces of the United States*, describes both traditional warfare (a confrontation between nation-states or coalitions/alliances of nation-states) and IW. Traditional warfare typically involves small-scale to large-scale, force-on-force military operations in which adversaries employ a variety of conventional military capabilities against each other. By contrast, IW, which has emerged as a major and pervasive form of warfare, typically involves a less powerful adversary that seeks to disrupt or negate the military capabilities and advantages of a more powerful, conventionally armed military force, which often represents the nation's established regime. IW favors indirect and asymmetric approaches, though it may employ the full range of military and other capabilities, in order to erode an adversary's power, influence, and will. What makes IW "irregular" is its focus—a relevant population—and its strategic purpose—to gain or maintain control or influence over, and the support of that

relevant population through political, psychological, and economic methods. Friendly forces may also engage in stability operations to restore order in the aftermath of an irregular or traditional war or a natural disaster. Stability operations encompass various military missions, tasks, and activities conducted outside the US in coordination with other instruments of national power to maintain or reestablish a safe and secure environment and provide essential governmental services, emergency infrastructure reconstruction, and humanitarian relief. Stability operations likely will be conducted in coordination with and in support of HN authorities, USG departments and agencies, NGOs, IGOs, and the private sector. The long-term goal is to help develop indigenous capacity for securing essential services, developing a viable economy, establishing a legal process that conforms to local cultural norms, and restoring civil society with functioning institutions. JIPOE support during operations that focus on the civil population as a COG require a different mindset and different techniques than a JIPOE effort that focuses on defeating an adversary militarily. The following discussion identifies some of the special considerations relevant to applying the JIPOE process in support of nontraditional missions. Appendix B, “Somalia 1992-1993—A Case Study of Support to Stability Operations and Irregular Warfare,” illustrates many of the constructs discussed in this section.

3. Sociocultural Factors

JIPOE support during IW usually requires a more detailed understanding of the relevant area’s sociocultural factors than is normally the case during traditional warfare. SCA improves the JFC’s ability to understand, predict, respond to, and/or influence the decision making and associated behavior of relevant actors. JFCs, subordinate commanders, and their staffs must understand the cultural landscape in which they operate in order to make sound decisions concerning force protection and the deployment of forces. JIPOE products must describe the impact of ethnic groups and religions, to include their associated leadership, the locations of places of worship and cultural/historical significance, languages being spoken, population density, age, living conditions, allocation of wealth, and means of income. It is also important to analyze the local labor pool’s technical skill sets and social business norms that could provide support to the adversary or impact friendly operations. This information provides the backdrop against which an analysis of social and political factors will allow for successful operations. The key social and political factors revolve around understanding previous political systems, parties, formal and informal leaders, affiliations, political grievances, loyalty to former local, regional, and national government officials, patterns of political tolerance or violence, and the education system. This information will provide an appreciation of the nation’s cultural landscape, its previous and potential future leaders, and its expectations of governance and civil institutions. In order to accomplish this, JIPOE analysts must develop a comprehensive understanding of the following factors based on the specific operation to be conducted:

- a. **Society.** A society is a population whose members are subject to the same political authority, occupy a common territory, have a common culture, or share a sense of identity. Every society has social structure and culture; however, societies are

dynamic and heterogeneous. JIPOE must consider societies or societal links to groups outside the operational area and the impact of society on the overall OE.

b. Social Structure. Social structure refers to the relations among groups of persons within a society and involves the arrangement of the parts that constitute society, organization of social positions, and distribution of people within those positions. Understanding social structure provides insight into how a society functions. Groups may be based on racial, ethnic, religious, or tribal identities. Group identity is more than being aware of what the societal makeup is by percentage or group. The JIPOE assessment of ethnic breakdown must explore its relationship to any DC problems, religious affiliations, historic grievances and conflict, loyalty to formal and informal leaders, points and dates of cultural significance, and language. Even in a society that is seemingly devoid of any coherent social system, the reality is that a system still does exist. For example, a clan-based society that is made up of entities struggling to seize and maintain power is a system in itself. Failure to conduct detailed analysis creates the risk of new or renewed tensions and violence, thereby undermining any effort toward a safe and secure environment or enduring institutions.

(1) Races and ethnic groups are key aspects of social structure. A race is a human group that is different by virtue of innate physical characteristics. An ethnic group is a community whose learned cultural practices, language, history, ancestry, or religion distinguish them from others. Religious groups may be subsets of larger ethnic groups. Racial or ethnic groups are often key sources of friction within societies.

(2) Networks may be an important aspect of a social structure as well as within an insurgent organization. Common types of networks include elite networks, prison networks, criminal networks, worldwide ethnic and religious communities, and neighborhood networks. JIPOE must determine what networks exist, what their purpose is, who is involved, how they operate, and how they adapt. Analysts should pay particular attention to the key persons in these networks and how they lead others within the network. This will not only facilitate the identification of network strengths and weaknesses, but will also greatly enhance planners' abilities to influence the networks.

(3) Groups collectively engaged to complete a common task are called institutions. Institutions are the long-term building blocks of societies. Organizations are institutions with bounded membership, defined goals, established operations, fixed facilities or meeting places, and means of financial or logistic support. Organizations may be communicating, religious, economic, social, or any combination of the previous four categories, and they may control, direct, restrain, or regulate the local populace. It is important to determine which members of what groups belong to each organization and how their activities may affect the local populace, whose interests they fulfill, and what role they play in influencing local perceptions.

(4) JIPOE analysts must understand the dynamic interaction among social groups to include formal relationships (such as treaties or alliances), informal relationships (such as custom or common understanding), divisions or cleavages, and cross-cutting ties (such as religious alignments that cut across ethnic differences).

(5) Another factor that must be assessed by the JIPOE analyst is the means in which the subgroups within the cultural landscape communicate and receive information. On the surface, it may seem obvious for the joint force to communicate to the populace through established media such as newspapers or broadcast. However, in some societies the populace may not have broad access to these sources of information, or may even have a cultural or historical mistrust of established media sources of information.

(6) JIPOE analysts must also understand the importance of roles, status, and norms within the society. Members of a society interact with social positions, and these social positions are referred to as status. For example, most societies associate particular statuses with particular social groups, such as family, ethnicity, or religion, and every social status has a corresponding cluster of expected behaviors (roles) that dictate how a person is expected to think, feel, or act. The standard of conduct for given roles and status is known as a social norm. A social norm is what people are expected to do or should do, rather than what people actually do. Norms may be either moral or customary. When a person's behavior does not conform to social norms, it will result in social disapproval. Social status and roles dictate social norms that may significantly impact stability operations.

(7) JIPOE products should inform the planning process by identifying historical patterns of crime in local areas as well as locations of police stations and jails. The JIPOE effort should also address the relationship between the population and police, the current or past methods of justice, how stability operations may drive criminal activity, and who will be the perpetrator or victim of crimes.

c. **Culture.** Once the social structure has been thoroughly assessed, the JIPOE effort should identify and analyze the culture of the society as a whole and of each major group within the society. Culture is a system of shared beliefs, values, customs, behaviors, and artifacts that members of a society use to cope with their world and with one another. Culture is habitual and perceived as "natural" by people within the society. Culture conditions an individual's range of action and ideas; influences how people make judgments about what is right, wrong, important, or unimportant; and dictates how members of a society are likely to perceive and adapt to changing circumstances. Where social structure comprises the relationships within a society, culture provides meaning within the society. JIPOE should identify and analyze the culture of the society as a whole and of each major group within the society.

(1) **Identity.** Primary identities can be national, racial, and religious (specific examples could be tribe and clan affiliation). Secondary identities include past times or personal preferences. Individuals belong to multiple social groups which determine their cultural identities. Furthermore, people tend to rank order these identities depending on the importance they place on different groups. As a result, an individual's cultural identities may conflict with one another, such as when tribe loyalty may conflict with political affiliation.

(2) **Beliefs.** Beliefs are concepts and ideas accepted as true. Core beliefs are part of an individual's primary cultural identity and are highly resistant to change.

Examples include religious beliefs, the importance of individual and collective honor, and the role of the family. Attempts to change the central beliefs of a culture may result in significant unintended second- and third-order consequences.

(3) **Values.** A value is an enduring belief that a specific mode of conduct is preferable to an opposite or converse mode of conduct. Values include beliefs concerning such topics as toleration, stability, prosperity, social change, and self-determination. Each group to which an individual belongs inculcates that person with its values and their ranking of importance. Since individuals are affiliated with multiple groups, their associated values are sometimes in conflict. For example, religious values may conflict with generational values or gender values.

(4) **Attitudes and Perceptions.** Attitudes are affinities for and aversions to groups, persons, and objects. Attitudes affect perception, which is the process by which an individual selects, evaluates, and organizes information from the external environment.

(5) **Belief Systems.** The totality of the identities, beliefs, values, attitudes, and perceptions that an individual holds (and the ranking of their importance) constitutes that person's belief system. Belief systems act as filters through which individuals process and adapt to new information.

(6) **Cultural Forms.** Cultural forms are the concrete expression of the belief systems shared by members of a particular culture. These forms include language, rituals, symbols, ceremonies, myths, and narratives and are the medium for communicating ideologies, values, and norms that influence thought and behavior. A culture's belief system can be decoded by observing and analyzing its cultural forms.

(a) **Language.** Language is a learned element of culture. Communication requires more than just grammatical knowledge; it requires understanding the social setting, appropriate behaviors toward people of different statuses, and nonverbal cues, among other things.

(b) **Rituals.** A ritual is a stereotyped sequence of activities involving gestures, words, and objects. Rituals can be either religious or secular.

(c) **Symbols.** Institutions and organizations often use cultural symbols to amass political power or generate resistance against external groups.

(d) **Ceremonies.** Ceremonial behavior can follow rigid etiquette or a prescribed formality. Just like rituals, it is vital to understand not only the ceremony, but the context in which they take place and the meaning thereof.

(e) **Myths.** Myths serve to explain some phenomena which to the populace can have a great influence on the perceived truth. The counterinsurgent must understand that some myths are as resilient as the truth, and can influence the target audience either negatively or positively.

(f) **Narratives.** Narratives are the means through which ideologies are expressed and absorbed by members of a society. The most important cultural form for counterinsurgents to understand is the narrative.

d. **Power and Authority.** The JIPOE effort should identify how both formal and informal powers are apportioned and used within a society. In some operations, informal power holders, such as social elites, ethnic leaders, and religious figures, are more important than formal power holders. Often, the key power holders with connections and influence in a society operate behind the scenes, and are therefore difficult to identify and assess. JIPOE products should identify these key individuals and assess their motivations and strategies. The JIPOE effort should also identify current and emerging parties; formal and informal leaders; party and leader influence on local, regional, and national levels; ties to threat or religious entities; facilities; and financial means of support. The JIPOE process also identifies previous actors and influencers as well as current political parties and their agendas; analyzes the local, regional, and national concept of what constitutes a legitimate government, and determines any political grievances that the population may have had locally, regionally, or nationally. A complete JIPOE analysis will inform not only the potential timing for establishing a civil government, but also the nature of the government that should be established and the political personalities who should (or at least should not) establish it and occupy key offices. For example, conducting elections in Bosnia prior to the establishment of viable institutions resulted in the return of officials who were tied to or were of like mind to those who had initiated the conflict. JIPOE analysts must understand the types of influence each group has, what it uses that influence for, and how it acquires and maintains its influence. Five major forms of influence in a society include coercive force, social capital, economic power, authority, and persuasive communication.

(1) **Coercive Force.** Coercion is the ability to compel a person to act through threat of harm or by the use of physical force. Coercive force can be positive or negative. Groups may use coercive means for a variety of purposes such as protecting their community, carrying out vendettas, and engaging in criminal activity. One essential role of government is providing physical security for its citizens by monopolizing the use of coercive force for legitimate purposes.

(2) **Social Capital.** Social capital refers to the ability of individuals and groups to use social networks of reciprocity and exchange to accomplish their goals. In many societies, patron-client relationships are an important form of social capital. In a system based on patron-client relationships, an individual in a powerful position provides goods, services, security, or other resources to followers in exchange for political support or loyalty, thereby amassing power.

(3) **Economic Power.** A group or individuals may use formal or informal economic incentives and disincentives to change people's behavior. Economic systems can be formal, informal, or a mixture of both. In weak or failed states, the formal economy may not function well. The informal economy refers to such activities as smuggling, black market activities, barter, and exchange. For example, in many societies, monies and other economic goods are distributed through tribal or clan

networks through patronage systems. JIPOE must analyze how groups use economic power with the OE and how that power can be exploited.

(4) **Authority.** In some societies substantial power stems from the authority associated with a social position. Authority may be grounded in law and contract and codified in impersonal rules. Alternatively, authority may be exercised by leaders who have unique, individual charismatic appeal, whether ideological, religious, political, or social. Authority may also be invested in a hereditary line or particular office by a higher power.

(5) **Persuasive Communication.** Power may be achieved through the use of persuasive communication to influence individual beliefs that will change or reinforce attitudes and behaviors. These include communications that systematically convey information with the intent of affecting the attitudes, perceptions, and behaviors of groups or individuals.

e. **Interests.** Interests refer to the core motivations that drive behavior. During times when the government does not function, groups and organizations to which people belong satisfy some or all of their interests that the government does not. The interests of civil populations usually include physical security, essential services, economic well-being, and political participation.

(1) **Physical Security.** During any period of instability, people's primary interest is physical security for themselves and their families. When the US, HN, or multinational forces fail to provide security or threaten the security of civilians, the population is likely to seek security guarantees from insurgents, militias, or other armed groups. JIPOE analysts should determine the extent to which the population is safe from harm, whether there is a functioning, fair, and nondiscriminatory police and judiciary system, and who provides security in the absence of a functioning state apparatus.

(2) **Essential Services.** Essential services provide those things needed to sustain life and include items such as food, water, clothing, shelter, electricity, waste removal, and medical treatment. People pursue their essential needs until they are met and tend to support any group that provides such services. Stabilizing a population requires meeting these needs.

(3) **Economy.** A society's individuals and groups satisfy their economic interests by producing, distributing, and consuming goods and services. How individuals satisfy their economic needs depends on the society's level and type of economic development. For instance, in a rural-based society, land ownership may be a major part of any economic development plan, while in urban societies public- and private-sector jobs may be of greater concern. Real or perceived economic disparities among social groups can contribute to political instability and insurgents may attempt to exacerbate such disparities by attacking the economic infrastructure of a society. JIPOE analysts help identify economic disparities and assess the vulnerabilities and capabilities of economic infrastructure.

(4) **Political Participation.** Another common interest of civil populations concerns the right to effective political representation and participation. Groups that have been denied participation in the political process often support insurgencies or organizations that promise enfranchisement. Very often, such groups rally around traditional or charismatic authority figures.

4. Infrastructure Analysis

a. Infrastructure analysis takes on added importance as the focus of military operations shifts from target development during traditional war to the reconstruction of facilities and reestablishment of services during stability operations. Infrastructure analysis should emphasize what currently exists and what is a critical shortfall locally, regionally, and nationally. JIPOE analysts should also assess the vulnerability of critical infrastructure to sabotage, direct attack, or other interference by the adversary. JIPOE infrastructure analysis must be tailored to orient commanders and planners on the priorities for US military, interagency, NGO, and IGO relief immediately and over time to prevent humanitarian crises and to reinforce a secure and stable environment.

b. From an infrastructure perspective, it is imperative to understand the current state of the previous and remaining government services, associated civilian expertise, transportation nodes, LOCs, hospital and medical treatment facilities, and public utilities as well as what is projected to remain. An accurate portrayal of the infrastructure status will potentially prevent or help eliminate humanitarian crises. JIPOE analysts should focus not only on what infrastructure is available, but also what is missing and the means by which it may be obtained. Subsequent to the initial needs, an assessment must be conducted in terms of the industrial, financial, and import/export systems within the country. Enduring institutions will require operating expertise, potential rebuilds or enhancement, security, monetary assistance, and resource inputs to not only restart but also to expand the inherent or existing capabilities and institutions. Doing so will allow the gradual buildup of the enduring institutions necessary for immediate assistance and long-term success. For example, during Operation JUST CAUSE, US forces gradually subdued looting crowds and secured the 142 sites that provided Panama City's sanitation, power, water, telephone, and other public services after three days of anarchy, initiating the rebuilding of Panama's infrastructure and an economy wracked by years of corruption.

c. Reliance on operational contract support (OCS) in past operations highlights the importance of assessing the state of the internal and external business environment as part of the OE. Business environment data analysis can help JFCs shape the OE, develop COAs, and synchronize OCS with interagency and multinational capabilities. The JIPOE analysis should consider the capabilities and limitations of the business environment that may impact OCS or could be leveraged by friendly forces or an adversary. It is also important to assess possible OCS effects and the unintended consequences of using commercial sources such as the unintended funding of the adversary or destabilizing an economy. Factors that should be considered include, but are not limited to, criminal element (organized or unorganized) effects on the business environment; customary business practices (bribes, nepotism, etc.); categorization of labor market restrictions

TASK FORCE 2010

Task Force 2010, a United States Forces Afghanistan initiative, was formed in July 2010 to help commanders better understand with whom they were doing business and to ensure that contracting actions did not undermine the United States Government's efforts in Afghanistan. The organization's mission was to provide commanders and acquisition teams with situational understanding regarding the flow of contract funds and recommend actions to deny criminal actors, networks and insurgents the opportunity to benefit from illicit revenue or stolen property. By following the money and conducting assessments of contracts and vendors operating in Afghanistan, the Task Force was able to recommend risk mitigation strategies to commanders and contracting activities to prevent fraud and abuse and when appropriate to hold contractors accountable for their actions. Based on review of over 2,000 contracts and 20,000 financial records dating back to 2002, at least \$450 million or 12 percent of the contract vehicles reviewed had connections to or were influenced by power-brokers, criminal networks or the insurgents.

SOURCE: Various Sources

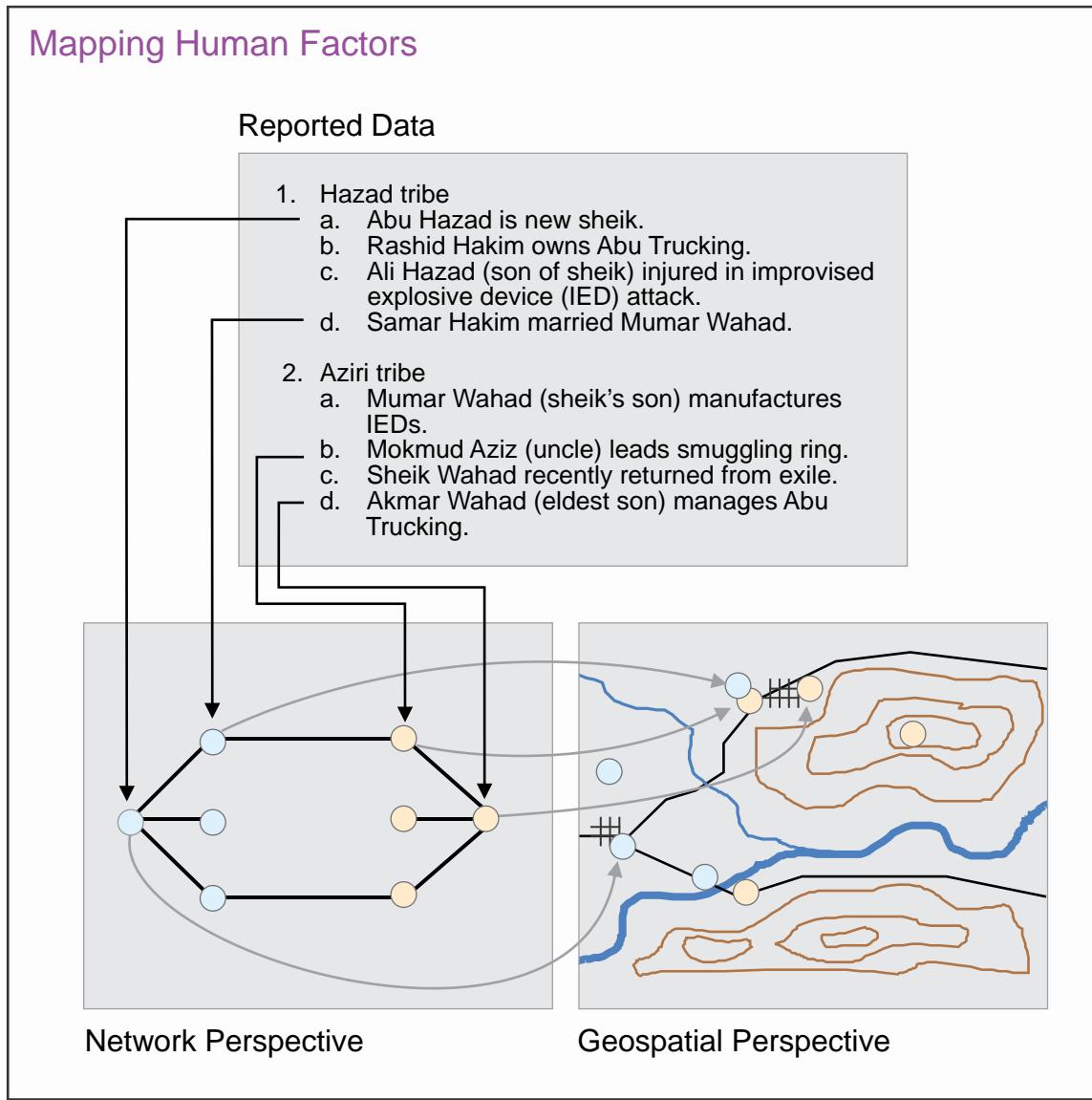
(skilled, unskilled, educated) on third-country nationals seeking work; local laws and regulations impact on conducting business; business climate (friendly or hostile); currency preferences (local or external); barriers to external and internal trade; availability of visas and work permits; and commodities and/or services available on the local market.

5. Emphasis on Detailed Knowledge

JIPOE analysts must use information from a variety of intelligence and non-intelligence sources and methods and use appropriate analytical strategies to develop the detailed knowledge required for SCA. Determining the sociocultural landscape of an operational area is the result of a fused intelligence effort and normally requires a heavy reliance on information from open sources, such as other USG departments and agencies, NGOs, IGOs, academic institutions, and HN authorities. In combination, HUMINT, GEOINT, and other sources enable the creation of products invaluable during IW. For example, US and multinational forces operating in an urban environment will require the ability to correctly orient their forces against specific street addresses based on local tip-off information. Operations directed against the wrong building or dwelling may have unintended and/or undesired consequences. In many situations, however, street addresses in foreign urban areas do not use conventional numbering or structured identification systems. In these situations, HUMINT and information derived from open sources and local postal officials may be combined with GEOINT to produce accurate street address maps. Likewise, local law enforcement officials are crucial sources of information regarding criminal organizations, individuals, activities, areas, and methods. Employing biometrics can greatly assist US, HN, and multinational forces in authenticating and confirming the identity of individuals. During IW, insurgents, terrorists, and criminals seek to blend into the local populace and may carry false documentation. Biometrics can

establish the true identity of these individuals and can link them to networks and past events. Mapping relevant sociocultural and environmental factors utilizes information and intelligence from multiple sources (intelligence disciplines, WTI, biometrics-enabled intelligence, forensic-enabled intelligence, police units, military patrols, civil affairs units, provincial reconstruction teams, etc.) to produce network analysis diagrams and corresponding geospatial products. Using reported data, Figure VII-1 depicts both a network perspective and a geospatial perspective to understand the sociocultural and environmental factors of the OE.

a. **GEOINT.** GEOINT applies to all spatially referenced functions, data, and activities within the JIPOE process, and GEOINT data and processes provide the foundation for all fusion, analysis, and visualization activities. It is essential that GEOINT support be coordinated in advance between the joint force, national agencies,



CCMDs, and multinational and HN forces in order to form a common point of reference and framework for JIPOE. The accuracy and scale of foreign maps and charts may vary widely from US products. Additionally, release of US geospatial and JIPOE products and information may require foreign disclosure approval. While joint operations graphics are often used as the standard scale for joint plans and operations, IW requires extremely accurate geospatial products and information with significantly greater detail. The JFC should work to ensure that all subordinate commands utilize compatible GEOINT products, data, and standards to ensure JIPOE processes and products developed by the joint force J-2 adequately support the mission. The joint force GEOINT staff officer will assist all units and activities participating in stability operations to acquire all GEOINT products prescribed by the JFC.

b. **HUMINT and CI.** Due to the emphasis placed on understanding the civil population, force protection concerns, and foreign intelligence threats, both CI and HUMINT assume increased importance during IW and often provide the most valuable sources of information. However, CI and HUMINT infrastructure may not be in place when US forces initially arrive. Appropriate liaison channels need to be established as quickly as possible with interagency, multinational partners and appropriate elements within the HN while HUMINT and CI operations are established. This will require early planning and release authority for exchanging intelligence with the HN and other multinational partners. Operational circumstances may also require the insertion of HUMINT and CI personnel into the operational area ahead of a joint force. HUMINT and CI can provide ground truth reporting, intentions, support to route reconnaissance, and enabling support (e.g., cross cueing) for other intelligence disciplines. In addition, HUMINT collection and CI activities provide intelligence on foreign intelligence entities in the operational area that allow CI to detect, identify, assess, exploit, counter, or neutralize an adversary's capabilities and activities. HUMINT and CI can also be a critical element in supporting special operations and PR.

For additional information, see JP 2-01.2, Counterintelligence and Human Intelligence in Joint Operations.

c. **WTI.** WTI is particularly important during IW and enables rapid targeting of individuals or threat networks, analyzes material sourcing, indicators, observables, and signatures, and supports force protection and legal prosecution. It accomplishes this by leveraging technical and forensic capabilities and processes that collect, exploit, analyze, and disseminate information derived from improvised weapons in an asymmetric threat environment. Exploiting improvised weapons and related components provides information that identifies associations between people, places, and things leading to uncovering suspected terrorists and threat networks. By leveraging exploitation capabilities and synchronizing relevant information and intelligence products, the threat is more fully understood. The effects of WTI are amplified through robust information sharing throughout DOD, interagency, and partner nations.

For more information on WTI, see JP 2-01, Joint and National Intelligence Support to Military Operations, and JP 3-15.1, Counter-Improvised Explosive Device Operations.

6. Collaboration and Information Sharing

a. During IW, the joint force will usually operate in a complex international environment alongside other actors that will have a need for JIPOE products. They are also likely to possess valuable information they can provide the joint force that is unique to their own mission and sources. The J-2 must have a process in place to exchange information with external sources and assess the validity of information supplied by mission partners. This process should include foreign disclosure officers, delegated with the proper authority to disclose classified military information to foreign government and international organizations in accordance with legal and policy guidelines. Mission partners may include USG interagency members, UN organizations, partner nations, allied military and security members, local indigenous military and security forces, NGOs, and private companies and individuals providing contract services within the operational area. Although the joint force may have organic intelligence capabilities assigned, the aforementioned mission partners may provide the bulk of information for analyzing the OE. The J-2 may find the information coming from these disparate entities just as valuable, or more so, for assessing the overall situation than traditional intelligence sources.

b. Support to IW operations will require JIPOE planners to collaborate closely with IC elements to obtain expertise and materials that may not exist at the JTF level. This will occur to a greater extent during IW operations due to a less clearly defined adversary, and the increased significance of other relevant actors. In some cases, external support for analyzing sociocultural factors or tracking the financial activities of potentially threatening individuals, groups, or activities may be required. A JFC may also require forensic-enabled site exploitation and sensitive site exploitation that support internment operations, criminal investigation, and US and partner nation judicial proceedings. Additionally, MIPOE products can be obtained from the National Center for Medical Intelligence, which serves as the DOD focal point for medical intelligence. Requests for external support should be coordinated through the CCMD J-2/JIOC or joint force JIPOE coordination cell (if formed).

7. Focused Process and Tailored Products

The primary difference between the basic JIPOE process during traditional warfare and the JIPOE effort during IW is one of focus, particularly in the high degree of detail required, and the strong emphasis placed on SCA. JIPOE products must be tailored to the situation and focus on analyzing the vulnerabilities of critical infrastructure, understanding the motivations of the adversary, and identifying any shared aspirations, values, or outlooks that link the adversary to the general population. Due to the fluid and dynamic nature of operations, commanders and their staffs are often overwhelmed with details and can quickly reach information overload. The JFC and supporting units, multinational forces, and local officials and law enforcement personnel should have access to continuously updated situational depictions of the OE in order to help them be more effective. In this type of environment, written products are less likely to be used unless they are of critical importance. In some operations, the JIPOE effort will be graphic intensive and use techniques that can easily and rapidly update and summarize

relevant aspects of the OE. The following discussion describes some of the specific types of information that should be considered during the JIPOE process. Techniques for graphically depicting this information are illustrated in Appendix E, “Joint Intelligence Preparation of the Operational Environment Specialized Products.”

a. **Defining the OE.** The transition from traditional warfare to nontraditional missions may be blurred in that the stability phase may begin in some liberated areas under US or multinational control prior to conclusion of hostilities. Therefore, stability operations can and will occur during most military operations regardless of the level of conflict. They can also occur in response to natural or man-made disasters, outside the context of any political or military conflict. In these situations, defining the OE requires a different mindset than one focused on the conventional military defeat of an adversary.

(1) JIPOE during IW places a heavy emphasis on the identification and evaluation of unforeseen obstacles to mission accomplishment. In addition to establishing a secure environment, a mission of the joint forces may be to help set the conditions for effective governance. There may be numerous obstacles presented by the OE to setting conditions conducive to effective governance that do not involve use of violence against the joint force or the civilian authorities. Nonetheless, these obstacles must be identified by JIPOE analysts and considered by the JFC during operation planning.

(2) During IW, the single most important aspect of the OE will usually be the civil population. The role of the JIPOE analyst is to anticipate natural and human impediments to fulfilling the joint mission. There are instances in which the mission will be opposed by groups or individuals using political or violent means of resistance. In other cases, the population will welcome outside assistance but the geography, climate, infrastructure, or nature of the mission itself will present challenges that must be anticipated and overcome. The JIPOE process in support of nontraditional missions will necessarily involve the identification and complex examination of all relevant factors—environmental and human—that help define the OE.

b. **Describing the Impact of the OE.** The JIPOE effort during IW should be focused on detailed analysis of all the relevant sociocultural aspects previously described, and should portray the current state of government services, transportation system, LOCs, public utilities, finance, communication, agriculture and food distribution, health care, and commerce. In doing so JIPOE analysts are able to determine what exists versus what does not exist. The analyst can then recommend what is most critical immediately and over time, and enable commanders to tailor operations according to the situation. In addition to the types of templates and overlays discussed earlier, JIPOE products supporting IW may include graphic depictions of infrastructure status and sociocultural characteristics of the OE. These graphic products are a key visualization aid for commanders and their staffs, and should be designed with the perspective of the joint force mission in mind. For instance, during a mission in support of a natural disaster, such as a flood or earthquake, overlays should be produced depicting the condition of existing road and rail infrastructure and locations of displaced persons.

c. Evaluating the Adversary and Other Relevant Actors. The adversary may include other potentially hostile actors who may interact with the joint force and could potentially hamper mission accomplishment. During IW, the adversary may range from loosely organized networks or entities with no discernible hierarchical structure to highly structured organizations with centralized C2. Regardless of structure, the adversary must usually rely on the civil population for its sustainment—a critical vulnerability that may be exploited within the country’s interconnected systems. This type of adversary often wages a protracted conflict in an attempt to break the will of the nation-state and sometimes employs tactics (such as terrorism) that may alienate the civil population. Threats to completion of the mission can also come from a variety of physical, environmental, or sociocultural factors.

(1) In an effort to create a secure and stable environment it is imperative to understand the characteristics of the remaining military threat in the realm of conventional military forces, unconventional military forces, local militias, weapons, facilities and sustainment means being used, evolving chains of command, and influence on the local population. The JIPOE process must articulate the hostile forces both internal and external to the targeted country, to include their tactics, objectives, and key leaders.

(2) The identity and general uniformity of a military threat is often absent in an IW operation. When potentially violent groups exist in the operational area, the environment becomes even more complex with rapidly shifting, self-proclaimed group titles, multiple memberships by individual terrorists or cells, and blurred connections between groups, political movements, and communities. In many cases, the adversary is described in terms of individuals or small cells that are disaffected and prone to violence. These individuals may be terrorists and criminals that use illicit activities to finance terrorist activities in support of political goals. The roles of private organizations, such as contract security personnel, NGO service providers, indigenous neighborhood associations, religious communities, and other local actors must also be assessed.

(3) In addition, the potential criminal threat must be assessed. JIPOE analysts must determine who the criminals are, how they are organized, where they are located, and what their historical patterns of activity were. Beyond organized crime and its associated hierarchy, methods, and focus, the JIPOE effort should address what the environment will look like for crime following combat operations. For example, what are the needs and shortages of the local population that will drive crime and who are the likely targets? What will be the likely targets of looting? What are the capabilities of local police?

(4) The identities of individual actors, when known, may help intelligence organizations determine what type of threat or criminal activity may occur in the OE as well as who may be involved. I2 that is enabled with biometric and forensic technologies will facilitate the tracking of potentially hostile individuals and their potential involvement in threat or criminal activities.

d. Determining Adversary and Other Relevant Actor Courses of Action. The weaker opponent that exists in most IW situations will usually seek to avoid large-scale combat and will focus instead on small, stealthy, hit-and-run engagements and possibly suicide attacks. The weaker opponent also could avoid engaging the superior military forces entirely and instead attack nonmilitary targets in order to influence or control the local populace. An adversary using IW methods typically will endeavor to wage protracted conflicts in an attempt to break the will of their opponent and its population. IW typically manifests itself as one or a combination of several possible asymmetric approaches including insurgency, terrorism (such as hostage taking), information activities, organized criminal activity (such as drug trafficking or kidnapping for ransom), strikes and raids, and the use of WMD. The specific form will vary according to the adversary's capabilities and objectives. IW focuses on the control of populations, not on the control of an adversary's forces or territory. Adversary COAs may not be solely directed against US, multinational, or HN **military** forces, but may be directed more toward the sociological, governance, economic, and technological elements of a nation. Discerning these types of nonmilitary COAs presents a unique challenge to JIPOE analysts and requires a comprehensive appreciation for how all the relevant aspects of the OE interact with one another.

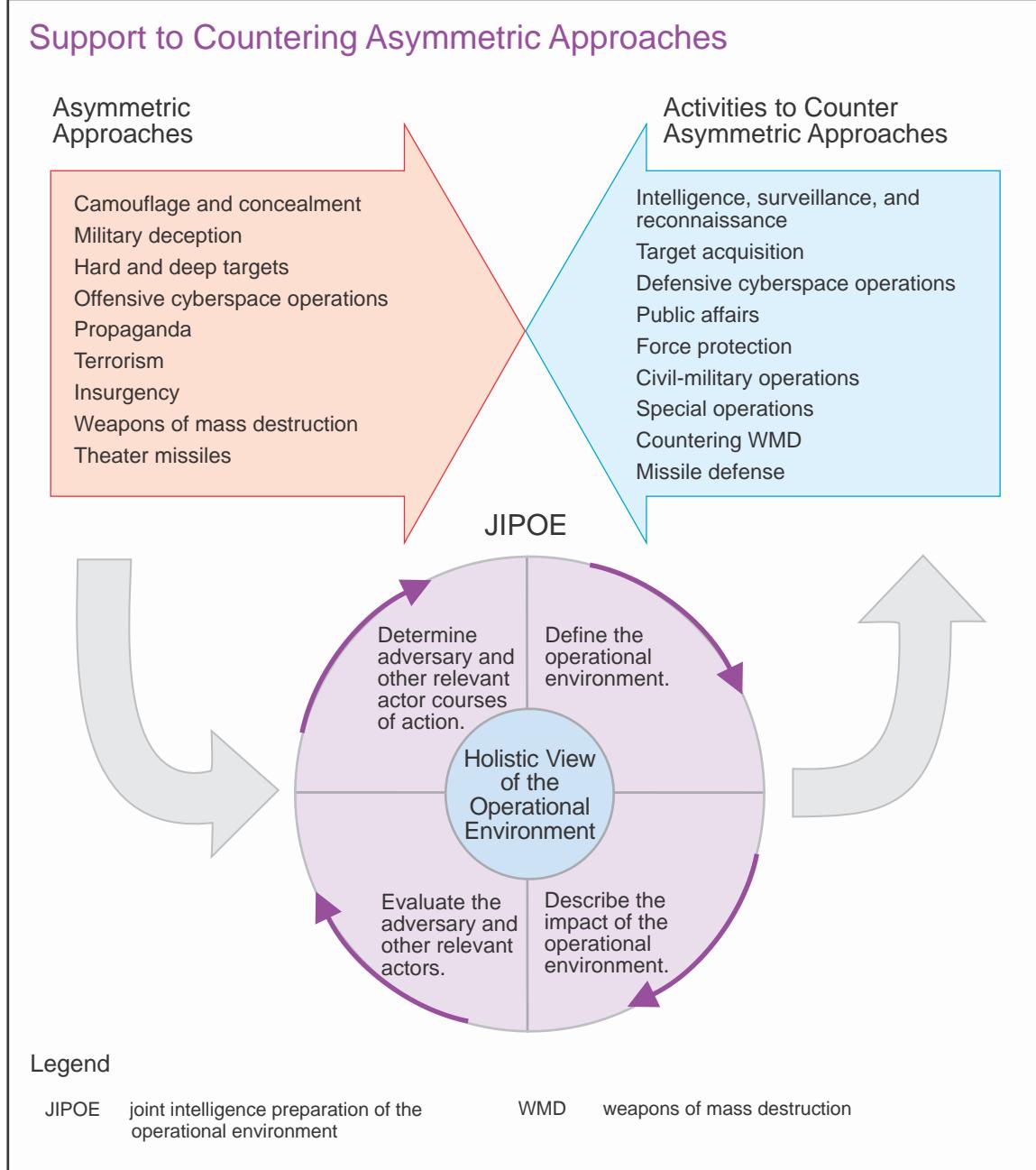
SECTION B. COUNTERING ASYMMETRIC APPROACHES

8. Overview

Adversaries are likely to use asymmetric approaches as a method to degrade or negate support for military operations or the military dominance of friendly forces. Adversary asymmetric approaches may include activities such as camouflage and concealment, military deception (MILDEC), hardening and burying targeted infrastructure, OCO, information activities, terrorism, insurgency, and the use or threatened use of WMD or CBRN, missiles, and improvised weapons. Several types of joint force activities and operations may be used to deter, mitigate, or counter an adversary's use of asymmetric approaches. JIPOE support to these types of joint force activities may require a slightly different focus than that described in previous chapters. Although the basic four-step JIPOE process remains the same, each activity will require detailed information relating to its own unique set of requirements. The following information, although not all inclusive, provides examples of some of the factors that should be considered when applying the JIPOE process in support of joint force activities capable of countering asymmetric approaches (see Figure VII-2).

9. Adversary Measures to Avoid Detection

The adversary may use asymmetric means to counter friendly intelligence collection capabilities and complicate friendly targeting efforts through MILDEC, camouflage and concealment, frequent repositioning of mobile infrastructure, and the selective use of air defense systems to force airborne ISR assets to less than optimum flight profiles. For example, Serbian forces in Kosovo made extensive use of camouflage, concealment, and decoys to mitigate the effectiveness of allied air strikes during Operation ALLIED FORCE. JIPOE helps to counter the effectiveness of these asymmetric techniques by

**Figure VII-2. Support to Countering Asymmetric Approaches**

supporting the joint force's ISR and targeting efforts. JIPOE support to ISR is designed to optimize the employment of ISR and target acquisition assets by forecasting the times and locations of anticipated adversary activity. Additionally, ISR collects the information required to update the joint force's JIPOE products. ISR is therefore both a consumer and provider of JIPOE data.

a. **Define the OE.** The OE must encompass all aspects relevant to adversary capabilities to counter friendly ISR and target acquisition efforts. Conversely, the JIPOE effort must also include all aspects and measures that would increase the efficiency of

friendly ISR and target acquisition assets. In addition to the locations of all adversary military forces, the OE should include the following:

- (1) Potential airfields, infrastructure, and optimum locations in the operational area capable of supporting friendly ISR and target acquisition operations.
- (2) Adversary or third-nation air defense envelopes and anti-satellite launch locations.
- (3) Areas of known or probable underground facilities; existing or under construction.
- (4) Actual and potential sources of intelligence or information (e.g., third-party nations, Internet sites) available to the adversary regarding friendly ISR capabilities, schedules, and flight profiles.
- (5) Adversary methods of identifying and manipulating sources of information on friendly ISR activities.

b. Describe the Impact of the OE

- (1) Identify and analyze potential deployment locations for land-, air-, and sea-based ISR assets. Consider factors such as:
 - (a) Location of ISR targets vice the range of ISR assets.
 - (b) Accessibility to the ISR site.
 - (c) Optical and radio LOS from the ISR site to adversary locations.
 - (d) Defense against rear area threats.
- (2) Locate obstacles to ISR operations such as:
 - (a) Areas with good natural camouflage and concealment.
 - (b) Objects that may interfere with ground, airborne, and naval ISR operations, such as high-power transmission lines, jungle vegetation, buildings, mountains, reefs, sandbars, defensive obstacles, and barriers.
 - (c) Widespread non-adversary military, commercial, and civilian use of radio frequencies.
 - (d) Adversary CI assets and activities, particularly efforts to target friendly intelligence sources and methods.
- (3) Evaluate how environmental conditions will affect both friendly and adversary ISR systems. Consider how extreme temperatures, winds, humidity, dust, cloud cover, atmospheric conditions, solar flares, and geomagnetic storms will affect:

- (a) Sensitive electronic equipment and antennas.
 - (b) Flight operations of ISR airborne platforms.
 - (c) LOS observation for optical, IR, millimeter wave, and other sights and sensors.
 - (d) Imagery resolution and radio frequency propagation.
- (4) Assess the adversary's capability to relocate underground, or disperse to remote areas, critical infrastructure and military assets (e.g., factories, storage depots, aircraft, missiles).
- (5) Determine those areas where the effectiveness of adversary air defense systems is optimized.
- (6) Identify areas where adversary air defense systems are least effective due to factors such as terrain masking or ground clutter.
- (7) Locate all subsurface facilities (subways, tunnels, mines, overpasses) of potential use to the adversary in relocating or hiding mobile targets.
- c. **Evaluate the Adversary and Other Relevant Actors.** Analyze the standard OB factors for each adversary unit, concentrating on how the adversary will appear to friendly ISR systems.
- (1) Identify signatures for specific adversary units and items of equipment.
 - (2) Analyze the adversary's capability, techniques, and procedures for conducting camouflage, concealment, MILDEC, CI, and HUMINT activities.
 - (3) Assess the adversary's normal state of OPSEC.
 - (4) Analyze the adversary's potential use of air defense assets in new or innovative ways to locate and destroy friendly ISR assets.
 - (5) Construct adversary templates identifying locations where the adversary is most likely to deploy military HVTs and HPTs at each phase of specific COAs.
 - (6) Analyze hard and deeply buried targets for points of vulnerability to precision munitions.
 - (7) Analyze adversaries' ability to operate in adverse weather conditions.
 - (8) Analyze adversary's ability to send and receive information through information technology infrastructures and information-sharing systems.

(9) Analyze the ability of the adversary and other actors to blend into the local population and/or exploit local identity management systems (e.g., government-issued credentials).

d. **Determine Adversary and Other Relevant Actor Courses of Action.** Identify and analyze adversary and other relevant actor COAs that could directly affect friendly ISR operations, such as:

(1) Attacks on friendly ISR assets located in the JSA.

(2) Specific types of lethal and nonlethal operations to counter friendly ISR (e.g., CI and HUMINT activities, SOF, global positioning system denial, OCO, lasers, CBRN).

(3) Reallocation of adversary air defense units, CI elements, or MILDEC assets to areas previously vulnerable to friendly ISR operations.

(4) Deception of ISR assets through disguise or disinformation so that they fail to track or identify the correct target (e.g., adversary changes name, flag, and paint of ship carrying sanctioned cargo; or adversary gives false indications of a sanctioned shipment or impending nuclear test for counter ISR purposes).

10. Adversary Exploitation of the Information Environment

An adversary is likely to use information-related approaches to degrade US C2, information processing, and decision-making capabilities, and to reduce public and international support for military operations. JIPOE enables characterization and assessment within the information environment by identifying adversary decision makers, decision-making processes, information and affiliated strategies, and IRCs. Information environment characterization occurs throughout the JIPOE process and the CCMD red team (if established) assesses unintended consequences and second- and third-order effects of friendly actions on adversaries.

For further information regarding IO and public affairs, see JP 3-13, Information Operations, and JP 3-61, Public Affairs.

a. **Define the OE.** The general characteristics of the OE, as it pertains to IO, will vary depending on factors such as the following:

(1) The capabilities and geographic reach of the friendly and adversary information-gathering systems.

(2) The sources of information upon which friendly and adversary forces base significant decisions.

(3) The capabilities of friendly and adversary information processing, analysis, transmission, reception, and storage systems.

(4) The strategic goals, political motivations, and psychological mindset of the targeted country or group.

b. **Describe the Impact of the OE.** The physical, informational, and cognitive dimensions of the information environment could impact both friendly and adversary forces and should be analyzed in order to:

(1) Evaluate existing and potential impediments to the flow of information required to support the decision-making process.

(2) Identify and evaluate critical nodes in information collection, processing, and dissemination systems.

(3) Determine the characteristics and vulnerabilities of specific C2 and ISR systems.

(4) Evaluate the level of adversary and friendly OPSEC and communications security discipline.

(5) Assess to what degree the values, beliefs, and motivations of key adversary population groups and military forces coincide or conflict with those of political leaders or may influence decision making.

(6) Identify potential vulnerabilities of friendly forces to specific types of adversary information themes or disinformation.

(7) Assess the effectiveness of MIS messages and actions in the OE.

c. **Evaluate the Adversary and Other Relevant Actors**

(1) Identify and assess adversary capability to conduct CO to include DCO and OCO.

(2) Identify adversary information themes and techniques for exploiting friendly and international public opinion.

(3) Identify potential “key communicators” that could be used by the adversary to influence friendly public opinion or decision making.

(4) Identify and prioritize significant sources of information and decision-making criteria used by friendly decision makers.

(5) Analyze friendly IRCs vulnerable to factors such as:

(a) C2 network structure vulnerabilities and redundancies.

(b) The susceptibility of friendly intelligence collection systems to MILDEC.

(c) Procedures for shifting to backup systems or making use of another nation's assets or networks.

(d) Frequency allocation techniques.

(6) Assess the potential for adversary exploitation of friendly perceptions regarding the political situation, military objectives, and general morale.

d. Determine Adversary and Other Relevant Actor Courses of Action

(1) Identify which friendly information systems are most likely to be targeted by adversary information capabilities. Correlate specific adversary information capabilities with indicators of other likely adversary activity (e.g., special operations, sabotage, conventional attacks).

(2) Postulate how the adversary will exploit any loss or degradation of specific friendly information systems at critical junctures during an operation.

(3) Identify likely adversary messages (e.g., misinformation, disinformation, propaganda, and information for effect disseminated to negatively influence public opinion about US and partner nation operations).

11. Terrorism

Adversaries may commit terrorist acts against the joint force and JIPOE helps combat terrorism by supporting force protection measures, CI, and other security-related activities. Combating terrorism consists of actions, including antiterrorism (defensive measures taken to reduce vulnerability to terrorist acts) and counterterrorism (actions taken directly against terrorist networks and indirectly to influence and render global environments inhospitable to terrorist networks), taken to oppose terrorism throughout the entire range of possible threats.

a. **Define the OE.** The OE, relative to combating terrorism, may involve an area larger than that associated with traditional types of operations. Since the operating area for some terrorist groups may not be restricted geographically, the AOI pertaining to the terrorist threat to the joint force may be worldwide.

(1) Identify the locations and communications networks of adversary terrorists and supporting nations, groups, or organizations, as well as the likely targets of such forces (such as friendly military housing units, transportation networks, and rear-area installations).

(2) Consider which terrorist groups are most likely to attack friendly personnel, equipment, and assets. Determine where they are normally based, and what third parties may provide them with sanctuary and support (training, logistics, etc.).

(3) Anticipate how additional missions such as a NEO may affect force protection.

(4) Assess the access to conventional weapons and the ability to obtain or create improvised weapons.

b. Describe the Impact of the OE

(1) Identify the stated and unstated strategic goals or desired end state of terrorist leaders.

(2) Determine the demographic issues that make protected areas or personnel attractive as potential terrorist targets.

(3) Evaluate the potential for terrorist attack on infrastructure targets such as local sources of drinking water, stockpiles of supplies, arms depots, transportation systems, communications infrastructure, and electrical power facilities.

(4) Assess the vulnerability of specific targets to attack. Consider both physical security issues and time constraints that might limit the availability of a target to terrorist attack.

(5) Identify probable avenues of approach as well as infiltration and exfiltration routes.

c. Evaluate the Adversary and Other Relevant Actors

(1) Analyze the strengths and weaknesses of terrorist ISR capabilities against force protection-related targets. Determine all available sources of the adversary's information.

(2) Assess the degree of risk the terrorist group is willing to take in order to attack various types of force protection targets. Determine which types of targets the adversary considers most valuable.

(3) Identify the goals, motivations, political or social grievances, dedication, and training of terrorist groups. Evaluate how these factors may affect target selection.

(4) Identify the adversary's preferred methods of attack such as bombing, kidnapping, assassination, arson, hijacking, hostage taking, maiming, raids, seizure, sabotage, or use of WMD or CBRN.

(5) Assess any variations in terrorist organization, methods, and procedures that may be unique to specific types of terrorist actions (e.g., ambushes, assassinations, bombings, hijackings).

(6) Determine and analyze the adversary's sources of external support especially regarding vulnerabilities, dependencies, or possible sources of increased support during a conflict.

(7) Identify the adversary's leaders; the location, disposition, and number of terrorist personnel; and the number and type of weapons available.

d. Determine Adversary and Other Relevant Actor Courses of Action

(1) Identify the adversary's most likely targets by matching friendly vulnerabilities against adversary capabilities, objectives, and risk acceptance.

(2) Assess the status of specific types of terrorist support activities that may indicate the adoption of a specific COA.

(3) Identify likely terrorist activity along infiltration routes, assembly areas, and surveillance locations near each of the adversary's likely objectives.

12. Insurgency

In order to counter US advantages in conventional forces, an adversary may support insurgencies in other countries or in response to an occupation of their country. Insurgents may use tactics ranging from terrorism to small or intermediate size unconventional attacks. In addition to supporting conventional forces, JIPOE analysts help support specialized joint force counterinsurgency activities such as special operations and CMO. Special operations encompass the use of specially organized, trained, and equipped units to achieve strategic and operational objectives by unconventional military means in hostile, denied, or politically sensitive areas. Special operations can be used to counter asymmetric threats by attacking or neutralizing adversary targets that may be inappropriate for engagement by conventional means alone. Due to the high level of physical and political risk involved, special operations require extremely detailed JIPOE products. CMO are the activities of a commander that establish, maintain, influence, or exploit relationships between military forces and civil authorities, both governmental and nongovernmental, and the civilian populace in a friendly, neutral, or hostile operational area to facilitate military operations and consolidate operational objectives. Effectively executed CMO are capable of countering potential asymmetric threats, such as attempts by the adversary to incite hostility toward friendly forces, or to use crowds, demonstrations, or DCs to hinder friendly military operations.

a. **Define the OE.** The AOI for special operations and CMO should encompass:

(1) Infiltration and exfiltration routes and corridors;

(2) Insurgent communications means and methods;

(3) Areas or countries that provide military, political, economic, psychological, or social aid to the target forces or threats to the mission;

(4) Military, paramilitary, governmental, and NGOs that may interact with the friendly force;

(5) The extent to which international law may constrain special operations and CMO activities both during and after hostilities;

(6) Sources of food and water, pattern of population distribution, and locations of critical infrastructure;

(7) The attitudes of the population toward relevant actors as well as how those attitudes are likely to change during the course of friendly operations.

(8) Assessment of conventional weapons access and the ability to obtain or create improvised weapons.

b. Describe the Impact of the OE

(1) Evaluate how METOC affects SOF capabilities to conduct infiltration and exfiltration operations, with particular attention to factors such as the following:

(a) Surface and upper air winds on SOF airborne, aerial leaflet, and loudspeaker operations.

(b) Benefits of clouds and low visibility on SOF air operations and special reconnaissance.

(c) Extreme temperatures, humidity, or sand on SOF personnel, aircraft, and other equipment.

(d) Tides, currents, and sea state as well as water temperature and bioluminescence on waterborne operations.

(e) Illumination.

(f) Space weather effects on SOF communications and PNT.

(2) Analyze the electromagnetic environment for its effect on SOF communications.

(3) Assess how the attitudes, values, and motivations of the civil populace will facilitate or constrain CMO activities. For example, nationalism or religious beliefs may cause the population to resent or resist certain types of CMO activities.

(4) Analyze the attitude of the local populace toward the existing or pre-hostilities civil government. Assess how this may affect CMO activities conducted through or in conjunction with local civil officials.

(5) Survey the extent of damage to local infrastructure, estimate the level of infrastructure capacity required to support the populace (including additional DCs), and determine if local sources of repair materials are sufficient.

(6) Estimate how and where the weather and environment might help or hinder insurgent forces. For example, drought may exacerbate food shortages, while flooding may increase the number of DCs and create shortages of shelter. These factors may help insurgents recruit additional members but could also reduce their access to necessities.

(7) Identify and locate insurgent intelligence information-sharing networks and main information nodes.

c. Evaluate the Adversary and Other Relevant Actors

(1) Assess the capabilities and procedures of the insurgent's military, political, and internal security forces.

(2) Evaluate the organizational structure and procedures of all groups supporting the insurgents.

(3) Identify the motivations and potential sources of discord within the insurgent force.

(4) Identify the adversary's leaders; the location, disposition, and number of insurgent personnel; and the number and type of weapons available.

(5) Identify and assess insurgent intelligence capabilities and activities.

d. Determine Adversary and Other Relevant Actor Courses of Action

(1) Identify how the adversary will attempt to counter special operations or CMO missions. Determine to what degree the adversary's likely response will include political, economic, social, or military countermeasures.

(2) Assess the insurgent's capability to secure all identified infiltration and exfiltration routes. Determine to what degree the adversary's strengthening of internal security in one area will detract from security in a different area.

(3) Postulate how the civil populace may respond to various types of CMO activities, and how insurgents may attempt to exploit such responses. For example, the adversary may attempt to use propaganda against a vaccination program or try to gain control over food distribution centers.

(4) Consider the effect that the insurgent's perception of friendly forces may have on COA selection. If friendly forces appear overwhelmingly powerful, non-confrontational COAs may be preferred, whereas the appearance of weakness may invite insurgents to pursue higher risk COAs.

13. Chemical, Biological, Radiological, and Nuclear Threats and Hazards

The actual or threatened development, acquisition, proliferation, or employment of WMD by an adversary can cause friendly forces to prepare for or to conduct counter-

WMD operations. JIPOE analysts help mitigate these threats by assessing the adversary's WMD-related activities and supporting the joint force's counter-WMD activities. The potential for accidental or deliberate release of CBRN hazards within the operational area is also a major JIPOE analytic concern. JIPOE must provide the JFC with an awareness of the capabilities and limitations of adversary CBRN weapons and delivery systems, their command, control, and release procedures, and the indicators of intent to employ CBRN weapons. JIPOE also plays a key role in cases where nation-state stability is threatened and there is the potential loss of positive control of WMD to non-state actors (e.g., insurgents, terrorists, criminal organizations, former regime members, former military members). The goal is to give the JFC an understanding of the implications to the joint force of an actual or threatened CBRN environment.

a. **Define the OE.** With regard to CBRN threats and hazards, the OE should encompass the following:

- (1) All adversary countries or groups as well as potential belligerents known or suspected of possessing a WMD capability and their intent or commitment to using it.
- (2) All current and potential locations of adversary and potential belligerent WMD delivery systems (e.g., missiles, artillery, aircraft, mines, torpedoes, and forces).
- (3) All adversary known and suspected CBRN capabilities, and their storage, movement, and production facilities.
- (4) Proliferation pathways (nodes, links, networks) of WMD and WMD-related material, capabilities, and expertise.
- (5) CBRN threats and hazards, capabilities, expertise, and sensitive and dual-use technologies.
- (6) Potential sources of hazards resulting from neutral activities.

b. **Describe the Impact of the OE**

- (1) Identify and assess key friendly logistic facilities and infrastructure vulnerabilities to CBRN threats and hazards.
- (2) Identify all known and suspected CBRN threats and hazards.
- (3) Identify critical METOC, climatological, and terrain effects on the use or release of WMD or CBRN hazards.
- (4) Analyze the terrain to identify potential target areas for WMD attack, such as chokepoints, key terrain, and transportation nodes.
- (5) Assess the ability of competent authority to maintain security of CBRN stockpiles and CBRN program elements.

c. Evaluate the Adversary and Other Relevant Actors

- (1) Analyze adversary capabilities, TTP, and will to proliferate and/or employ specific types of WMD. Determine the locations, volume, and conditions of adversary WMD/CBRN materials, agents, devices, and stockpiles.
- (2) Identify the specific types and characteristics of all adversary WMD delivery systems, with special attention to minimum and maximum ranges.
- (3) Evaluate adversary doctrine to determine if WMD employment is terrain oriented, force oriented, or a combination of both.
- (4) Assess the level and proficiency of adversary CBRN operations training and protective measures.
- (5) Assess the practicality and timeliness of an adversary's exploiting a new or different technology to develop a WMD capability and delivery means.
- (6) Identify key personalities in the adversary's WMD program, especially regarding WMD development, production, weaponization, storage, and employment.
- (7) Analyze the will and ability of non-state actors to seize CBRN stockpiles or program elements from a nation state.
- (8) Identify US or partner actions that are likely to deter the adversary from employing CBRN materials.

d. Determine Adversary and Other Relevant Actor Courses of Action

- (1) Identify friendly assets that the adversary is most likely to target for WMD attack.
- (2) Determine those locations where the adversary is most likely to deploy WMD delivery systems. These locations should be within range of potentially targeted friendly assets, yet still consistent with the adversary's deployment doctrine.
- (3) Evaluate those characteristics of the adversary's WMD stockpile that may dictate or constrain WMD use. These may include factors such as the quantity and yield of nuclear weapons, the age and shelf life of stored chemical munitions, and the production and handling requirements for biological agents.
- (4) Determine types and quantities of CBRN material likely to be employed by an adversary.
- (5) Determine vulnerable locations where non-state actors are most likely to seize WMD stockpiles or program elements from a nation-state.

(6) Identify adversary's potential COA to circumvent friendly interdiction options of proliferation-related shipments in transit.

(7) In view of US policy and flexible deterrent options, assess whether an adversary will refrain from the use of WMD against friendly forces, or in the case of a state actor, will be deterred from using WMD against its own populace.

14. Missiles and Precision Munitions

An adversary may use ballistic and cruise missiles to directly threaten friendly forces or to provoke political situations that may have strategic ramifications. For example, Iraqi Scud missile launches against Israeli targets during Operation DESERT STORM were intended to provoke an Israeli attack that could have had negative consequences for the coalition. Ballistic missile defense and counterair operations help protect the force from these types of asymmetric threats.

a. **Define the OE.** The OE for ballistic defense and counterair operations should incorporate portions of the air, land, maritime, and space domains. Consider factors such as the following:

(1) Areas likely to be targeted by adversary ballistic or cruise missiles.

(2) Ballistic and cruise missile launch locations, potential hide sites, forward operating locations, related locations, garrison locations, and associated infrastructure.

(3) Locations of operational and potentially operational airfields and launch locations.

(4) Range characteristics and flight profiles of adversary ballistic and cruise missiles.

(5) Bases, normal operating areas, and ranges of adversary SLCM-capable naval forces.

b. Describe the Impact of the OE

(1) Determine the locations of targets within range of specific adversary missile launch sites or airfields. Analyze the geography between the target and adversary base to determine potential missile trajectories and air avenues of approach for unmanned aircraft and cruise missiles.

(2) Identify areas for likely standoff attack orbits, SLCM launch locations, and aircraft carrier operating areas.

(3) Determine optimal times on target based on METOC conditions over the target area and METOC/climatological effects on platforms, sensors, and weapon systems to be employed over the target area; adversary launch and attack cycles; and light data.

- (4) Determine LOS from friendly air and missile defense systems and radar.
- (5) Determine potential space weather impacts to launch, detection, tracking, and intercept.

c. Evaluate the Adversary and Other Relevant Actors

- (1) Assess the adversary's launch procedures, resupply operations, and target selection priorities.
- (2) Consider the adversary's demonstrated capabilities, level of training and readiness status, operational cycles, and C2 regime, as well as actual equipment and hardware capabilities.
- (3) Evaluate the threat to friendly air defense systems, to include adversary artillery, unconventional forces, and EW assets.
- (4) Determine the adversary's requirements for air and missile base infrastructure, navigation aids, and communications system support equipment.
- (5) Analyze the characteristics, availability, and quantity of specific types of warheads and launch platforms.
- (6) Analyze potential for modification to adversary ballistic and cruise missiles to accommodate chemical agent payloads and resulting impact on missile range.
- (7) Analyze the adversary's will to launch missiles.

d. Determine Adversary and Other Relevant Actor Courses of Action. Although the employment flexibility of mobile missiles and modern aircraft make the determination of specific COAs difficult, the JIPOE analyst should postulate how missile operations will support the adversary's operations. Consider factors such as the following:

- (1) Likely timing of missile strikes.
- (2) Likely targets, objectives, and cruise missile avenues of approach.
- (3) Occupation or preparation of forward launch locations.
- (4) Strike package composition, ballistic missile flight profiles, distance between launch platforms, and time intervals between strikes.
- (5) Friendly air defense locations and coverage, and their likely effect on adversary missile operations.

SECTION C. SUPPORT TO DOMESTIC OPERATIONS

15. Special Circumstances in the United States

The parameters under which DOD intelligence components operate are different when operating within the US territorial jurisdiction than they are overseas. Use of DOD intelligence component capabilities within the US territorial jurisdiction receives heightened scrutiny by the public, media, and higher headquarters. This affects the role of intelligence during JIPOE efforts in the United States Northern Command (USNORTHCOM) and United States Pacific Command (USPACOM) areas of responsibilities.

- a. DOD intelligence component personnel assigned to North American Aerospace Defense Command, USNORTHCOM, and USPACOM are authorized to collect foreign intelligence and CI commensurate with their respective assigned missions. Per Executive Order 12333, *United States Intelligence Activities*, and DODD 5240.01, *Defense Intelligence Activities*, DOD intelligence elements, with designated responsibilities are authorized to collect military and military-related foreign intelligence, CI, and information on foreign aspects of narcotics production and trafficking. CI activities within the US territorial jurisdiction are conducted in coordination with the Federal Bureau of Investigation.
- b. When using DOD intelligence component capabilities within the US territorial jurisdiction (USNORTHCOM and USPACOM), the operational parameters set forth in DOD 5240.1-R, *Procedures Governing the Activities of DOD Intelligence Components that Affect United States Persons*, will usually be applicable. Accordingly, any anticipated use of DOD intelligence component capabilities for JIPOE within the US territorial jurisdiction of USNORTHCOM or USPACOM should be closely coordinated with the servicing staff judge advocate office to ensure that the contemplated use will be in accordance with law and policy.
- c. Commanders and staffs must carefully consider the legal and policy limits imposed on intelligence activities in support of law enforcement agencies, and on intelligence activities involving US citizens and entities by intelligence oversight regulations, policies, and executive orders. This oversight includes incident awareness and assessment products. No intelligence activities should take place while conducting defense support of civil authorities unless authorized by appropriate authorities in accordance with Executive Order 12333, *United States Intelligence Activities*, and DODD 5240.1-R.

APPENDIX A

THE LEYTE CAMPAIGN—A CASE STUDY OF SUPPORT TO MAJOR OPERATIONS AND CAMPAIGNS

"In considering the enemy's possible lines of action, the commander must guard against the unwarranted belief that he has discovered the enemy's intentions, and against ignoring other lines of action open to the enemy."

1941 edition of Army Field Manual 100-5, Operations

1. Operational Background

- a. By the summer of 1944, the Allied offensive against Japan had reached a crucial decision point (see Figure A-1). The Allies had conducted a two-prong strategic offensive in the Pacific during the previous year. As part of his island-hopping campaign in the central Pacific, Admiral Nimitz, Commander in Chief, Pacific Ocean Area (CINCPOA), conducted landings in the Gilberts, Marshalls, Carolines, and Marianas, with landings in the Palau Islands scheduled for September 1944. Meanwhile, General MacArthur, Commander in Chief, Southwest Pacific (CINCSOWESPAC) drove west along the New Guinea coast with landings at Morotai and Mindanao scheduled for mid-September and mid-November 1944, respectively.



Figure A-1. Pacific Theater Situation September 1944

b. The next objective would merge the two drives as the Allied offensive completed its goal of isolating Japan from its source of oil and seizing advanced bases in preparation for the eventual invasion of the Japanese home islands. The question was whether Formosa (followed by a landing on the Chinese coast) or the northern Philippines should be the objective of the coming offensive. Nimitz favored the Formosa strategy, while MacArthur favored the recapture of all of the Philippines. The debate centered on a number of points, to include: the potential for higher casualties in the Philippines; a friendly and supportive native population in the Philippines vice Formosa; the recent loss, due to the summer Japanese offensive, of Allied air bases in mainland China (for attacking Japan); and the political imperatives for recapturing the Philippines, an American possession. The debate was essentially decided in favor of the Philippine strategy during a meeting in Hawaii among President Roosevelt, General MacArthur, and Admiral Nimitz on 26-27 July. By early September, a target date for a landing on Leyte had been set for 20 December 1944 to be followed by landings on heavily defended Luzon in February.

c. In early September, Admiral Halsey, Commander Third Fleet, conducted a series of carrier air strikes in the Philippines in preparation for the upcoming landings in the Palaus. The limited Japanese response to his attacks resulted in Halsey's sending a message to Admiral Nimitz on 13 September recommending that the intermediate landings on Mindanao, the Palaus, Morotai, and Yap be canceled as unnecessary and the timetable for the landing at Leyte be accelerated to mid-October. Within 48 hours, after a flurry of message traffic between Nimitz, MacArthur's Headquarters, and the Joint Chiefs of Staff, the landings on Mindanao and Yap were canceled. The landings in the Palaus and Morotai were retained to obtain forward naval and air bases. The date for the landing on Leyte was advanced to 20 October 1944. The forces of the two commanders (CINCPAO and CINCSOWESPAC) would be combined to conduct the operation.

2. Joint Intelligence Preparation of the Operational Environment Analysis

a. The OE Defined

(1) **Mission Analysis.** The landing at Leyte was to be the first step to retaking the Philippines. Leyte would be seized in order to establish a centrally located air and logistic base from which the recapture of the rest of the Philippines, to include the heavily defended northern island of Luzon, could be accomplished. Control of the Philippines, especially Luzon, would enable the Allies to cut Japanese SLOCs, which ran through the South China Sea, and deny Japan access to its primary source of crude oil in the East Indies. US aircraft based in the Philippines would reinforce ongoing submarine operations and completely sever this vital supply link. Finally, the Philippines would provide an advanced base to support the eventual invasion of Japan. Japanese forces deployed outside the Philippines that were capable of interfering with the mission included: aircraft based in China, Japan, Okinawa, and Formosa; the surface fleet based at Singapore; and the carrier fleet based in Japan.

(2) **Boundaries.** Given these considerations, the JOA extended in an approximate 1,500-mile radius, centered on Leyte, from southern Japan to the north, the

Asian mainland (Japanese held) to the west, New Guinea (Allied held) to the south, and the Marianas (Allied held) to the east. The JOA cut across two US theaters of operation, MacArthur's Southwest Pacific Area (the supported command) and Nimitz's Central Pacific Area (the supporting command). MacArthur's operational area for the Leyte landing was the Philippine Archipelago, centered on the objective (the island of Leyte), its surrounding waters, and accompanying air space.

b. The Impact of the OE

(1) **Maritime Domain.** The Philippine Archipelago, which extends for over 1,000 miles from north to south, restricted naval operations in the otherwise open ocean environment of the Western Pacific. It separated the Philippine Sea to the east from the South China Sea to the west. The Philippine Archipelago, Formosa, and the Ryukyu Islands formed a physical barrier that protected SLOCs linking the East Indies (present-day Indonesia) and China with the Japanese home islands via the South China and East China Seas. There were only four maritime avenues of approach for naval formations transiting the Philippine Archipelago from the South China Sea to the Philippine Sea: north of Luzon; the San Bernardino Strait; the Surigao Strait; and south of Mindanao (see Figure A-2). Additionally, within the South China Sea there were areas of water along the Philippine Archipelago that were unnavigable due to uncharted rocks and shoals, further constraining maritime operations. While the Philippines would serve to channelize naval operations, they could also provide concealment from enemy observation for smaller ships (amphibious shipping, coastal freighters, patrol boats, etc.) hugging the extensive coastline. The large number of widely dispersed potential amphibious landing sites along the Philippine coast severely complicated the viability of ground defenses. Finally, the Philippines had a number of fine natural harbors that supported a thriving network of interisland trade and commerce. Since road networks on some islands were limited, interisland shipping was the primary means of moving bulk cargoes. Leyte Gulf provided sheltered waters large enough to accommodate an extremely large amphibious task force, and was capable of protecting shipping from the effects of bad weather (see Figure A-3). Its deep water approaches to the east made it easily accessible from the Philippine Sea, while the adjacent land mass restricted maritime avenues of approach from the north, south, and west. The eastern approach to Leyte Gulf was protected by Japanese naval minefields and was dominated by two small islands south of the gulf's mouth.

(2) **Air Domain.** In 1944, the Philippines contained an extensive network of over 100 operational airfields (ranging from grass strips to fully developed air bases). Thus, the network of airfields could be used to supplement maritime inter-island transport as well as disperse combat aircraft to multiple bases within range of Leyte. Additionally, the Philippines served as an island "ladder" linking New Guinea with Formosa, the Ryukyus, and the Japanese home islands. Thus, the network of airfields could be used to deploy aircraft and transport supplies south and east from Japanese-controlled territory (Formosa, the Ryukyus, Japan, and the Asian mainland), or north and west from Allied-controlled territory (Morotai, New Guinea, the Marianas, and Palau). Three airfields (Dulag, Buraun, and Tacloban) were within several miles of the Leyte amphibious landing site. If captured, these airfields could be used to support US land-based aircraft.

Modified Combined Obstacle Overlay for Philippines



Figure A-2. Modified Combined Obstacle Overlay for Philippines

(3) **Land Domain.** The island of Leyte dominated the central portion of the main Japanese LOC connecting the strategic islands of Luzon and Mindanao. Leyte's exposed eastern coastline offered excellent beaches to support an amphibious landing and the subsequent offloading of supplies. The adjacent coastal plain, the Leyte Valley, held the majority of the island's 900,000 native population, along with most of the towns and roads. The terrain within the Leyte Valley favored offensive operations. Additionally, it

Modified Combined Obstacle Overlay for Leyte

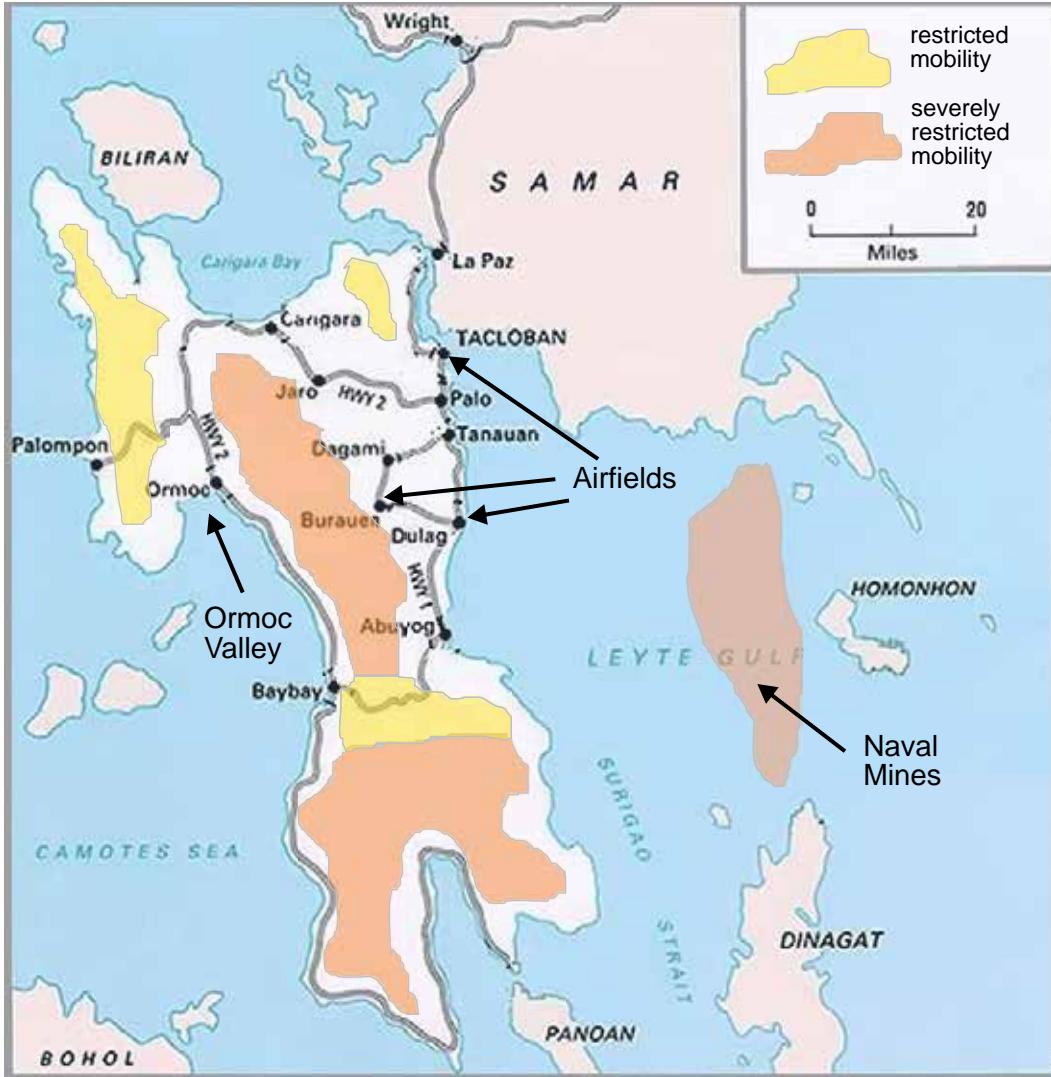


Figure A-3. Modified Combined Obstacle Overlay for Leyte

would provide the space necessary to establish the base infrastructure needed to support follow-on operations in the Philippines. The island, which was only 50 miles wide at its greatest width, was dominated by a heavily forested north-south central mountain range of up to 4,400 feet in height. Consequently, Japanese forces based in the mountains could threaten any build-up in the Leyte Valley. The west side of the island contained the Ormoc Valley and the port of Ormoc City. However, the remainder of the western side of the island was mountainous, sparsely populated, and had poor land LOCs. The terrain in the west favored defense, while the port of Ormoc City offered a resupply point for Japanese reinforcements arriving by sea from nearby islands. Thus, to secure control of the vital Leyte Valley, the entire island would have to be captured.

(4) **Weather.** The tropical weather found year-round in the Philippines, with its autumn monsoon rains, would significantly impact military operations. It could seriously hamper land mobility and the rapid construction of bases and supporting logistic infrastructure. This could be critical as carrier-based air power would be forced to remain close offshore supporting the landing force and protecting it from air attack, until land-based air power could be established in strength on Leyte. This would rob US aircraft carriers of one of their primary strengths—mobility—by fixing them in place, making them more vulnerable to attack.

(5) Nonmilitary Aspects of the OE

(a) Politically, the recapture of the Philippines was important in that it would demonstrate that the United States was willing to sacrifice to meet its obligations to an Asian people. It would be physical proof that, while the Philippines had been lost at the beginning of the war, the United States had not abandoned the Philippine people. This would be an effective counter to Japanese propaganda of “Asia for the Asians” and help to encourage opposition to the Japanese in other occupied Asian nations. It would also be a crucial aspect to establishing the US position in post-war Asia. With respect to the upcoming battle, it would mean that the sixteen million people of the Philippines would be friendly to US forces and actively support the landings through resistance activity.

(b) The Japanese leadership was desperate to achieve a tactical victory against the United States, or at least to inflict unacceptably heavy losses on US forces. It was hoped, perhaps unrealistically, that a limited victory could be used as leverage to open the door to peace negotiations.

(c) For Japan, the importance of the continued flow of crude oil from the East Indies could not be overstated. It was access to oil that was the *casus belli* for Japan and directly led to the attack on Pearl Harbor. Japan was already suffering a shortage of fuel because of aggressive submarine attacks on its SLOCs to the East Indian oilfields.

c. **Evaluation of the Adversary.** The Japanese 14th Area Army was responsible for defending the Philippine operational area with a total of 432,000 troops (with between 180,000-200,000 on Luzon) and over 800 aircraft (from the 4th Air Army and 1st Air Fleet) (see Figure A-4). The 35th Army was assigned to defend the Visayas (including Leyte) and Mindanao. This included the 16th Division (controlling approximately 20,000 troops), which was responsible for defending Leyte, and the 30th Division, located nearby on Mindanao. As early as April 1944, Japanese forces began constructing additional defenses on Leyte as one of several anticipated US landing sites. Additional Japanese aircraft (Army and Navy) were located on Okinawa, Formosa, and Japan. The Japanese aircraft carriers were also located in Japan in order to train replacements for their badly attrited air crews. The remainder of the Japanese surface fleet was anchored off Singapore at Lingga Roads due to the shortage of fuel in Japan.

d. **Determination of Japanese Courses of Action.** The Japanese end state was to retain control of their SLOCs between Japan and the East Indies as well as to inflict

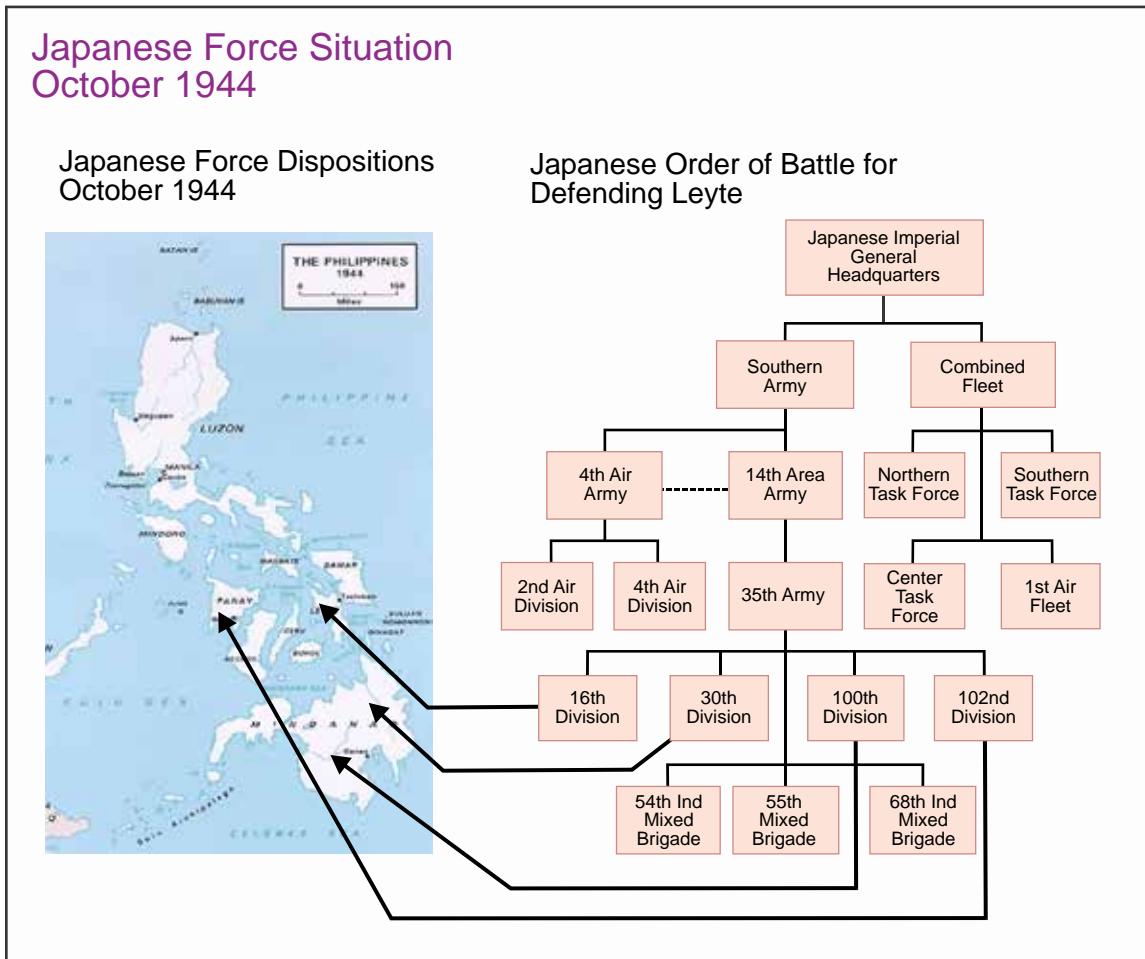


Figure A-4. Japanese Force Situation October 1944

unacceptable damage and casualties upon US forces in the hopes of opening peace negotiations. Operational Japanese objectives were to retain control of the Philippines, destroy or severely damage US forces, and defeat the amphibious operation.

(1) Based upon Japanese objectives and the disposition of Japanese forces immediately following the landing, broad Japanese COAs included the following:

(a) **COA 1.** Defend Leyte with the forces on hand (see Figure A-5). Past Japanese practice, as well as their military doctrine, made this COA likely. However, given the immense superiority of US military power in the area of operations, this COA would only delay an inevitable Japanese defeat, albeit at a cost to the US in the form of casualties.

(b) **COA 2.** Reinforce land forces on Leyte and committed air units in the Philippines (see Figure A-6). This COA would enable the Japanese to prolong the battle, increase US casualties, and/or prepare for a future attack. However, given US air and naval superiority, Japanese forces would suffer severe attrition as they moved en route to Leyte, thus increasing Japanese losses, while at the same time enabling the US buildup on Leyte to continue.

Situation Template for Course of Action 1
(Defense of Leyte)



Figure A-5. Situation Template for Course of Action 1
(Defense of Leyte)

(c) **COA 3.** Attack in order to disrupt the landing and isolate the landing force (see Figure A-7). While Japanese land forces on Leyte were too weak to conduct a full-scale ground offensive without reinforcement, Japanese air and naval units could conduct offensive operations to destroy US naval forces off Leyte. This would isolate the landing force and facilitate its subsequent destruction by a (reinforced) ground offensive.

Situation Template for Course of Action 2
(Reinforcement of Leyte)



**Figure A-6. Situation Template for Course of Action 2
(Reinforcement of Leyte)**

Japanese naval doctrine of the decisive battle argued for this COA. However, Japanese naval forces had been severely attrited (especially their carrier air crews) and had not recovered from their defeat at the Battle of the Philippine Sea. As a result, this COA risked the permanent destruction of Japanese naval power. Neither MacArthur nor Nimitz considered this COA likely, due to the weakened state of the Japanese Navy.

Situation Template for Course of Action 3
(Decisive Attack)



Figure A-7. Situation Template for Course of Action 3
(Decisive Attack)

(d) **COA 4.** Withdraw from Leyte to consolidate on Luzon (see Figure A-8). This COA would enable the Japanese to conserve combat power in order to defend Luzon, the most important island in the Philippines. However, this COA would also enable the US to establish a significant base on Leyte, thus endangering Japanese control of the Philippines and the SLOCs between Japan and the East Indies.

Situation Template for Course of Action 4
(Withdrawal from Leyte)



Figure A-8. Situation Template for Course of Action 4 (Withdrawal from Leyte)

(2) **Analysis of COAs.** Based upon doctrine, relative force ratios, past practice, and the Japanese cultural mindset, COA 1 (to defend Leyte with the forces on hand) was considered the most likely. However, such a defense would only delay defeat and was unlikely to achieve Japanese objectives unless it was augmented by elements of the other COAs. COA 2 (to reinforce Leyte with additional land and air units) was a medium risk and medium gain means of augmenting the defensive COA. COA 3 (a counteroffensive),

Appendix A

although a high-risk and high-gain option, was the only COA capable of fully meeting the desired Japanese end state and objectives. A counteroffensive was also the most dangerous Japanese COA for US forces, but was not considered likely by the US because of the risks involved and the weakened state of the Japanese Navy. COA 4 (a withdrawal from Leyte) was the least likely option based upon past Japanese practice and the strategic significance of Leyte. Figure A-9 summarizes these COAs in the order of their projected probability of adoption.

(3) **Event Template and Matrix.** The following event template (Figure A-10) combines the hypothetical NAI portrayed on the situation templates associated with each of the COAs identified above. The event matrix (Figure A-11) lists the indicators for each NAI that would confirm Japanese intentions to adopt a specific COA.

3. The Battle of Leyte Gulf

a. The United States gained air and naval superiority in the immediate vicinity of Leyte following a series of devastating carrier and land-based air strikes on targets in the Philippines, Okinawa, and Formosa. On 20 October 1944, the US Seventh Fleet began

Japanese Courses of Action Matrix				
Japanese Courses of Action (COAs)				
	COA 1	COA 2	COA 3	COA 4
Mission	Defend	Reinforce	Attack	Delay and withdraw
Objective	Attrition	Prolong attrition Future operations	Decisive battle	Conserve power
Ground Forces	Defend Leyte with forces on hand in decisive battle of attrition.	Same as COA 1 and reinforce Leyte with troops based in Philippines and China. Goal of prolonging battle of attrition.	Same as COA 2 but with goal of conserving and/or building up combat power for future offensive operations.	Withdraw from Leyte. Consolidate on Luzon.
Air Forces	Engage with aircraft already assigned to Philippines. Conserve air strength for future battles.	Same as COA 1 and reinforce committed air units with aircraft from Formosa, China, Okinawa, and Japan.	Reinforce as in COA 2 and conduct all-out attacks. Goal of supporting naval attack and isolating beachhead.	Same as COA 1 but with goal of supporting withdrawal of ground forces from Leyte.
Naval Forces	Avoid combat with surface fleet. Use land-based naval air to support air attacks.	Same as COA 1 plus transport ground forces to Leyte and provide land-based naval air to support air attacks.	Engage US naval forces with all available naval and naval air forces in accordance with decisive battle doctrine.	Support of withdrawal of ground forces from Leyte.

Figure A-9. Japanese Courses of Action Matrix

Leyte Event Template

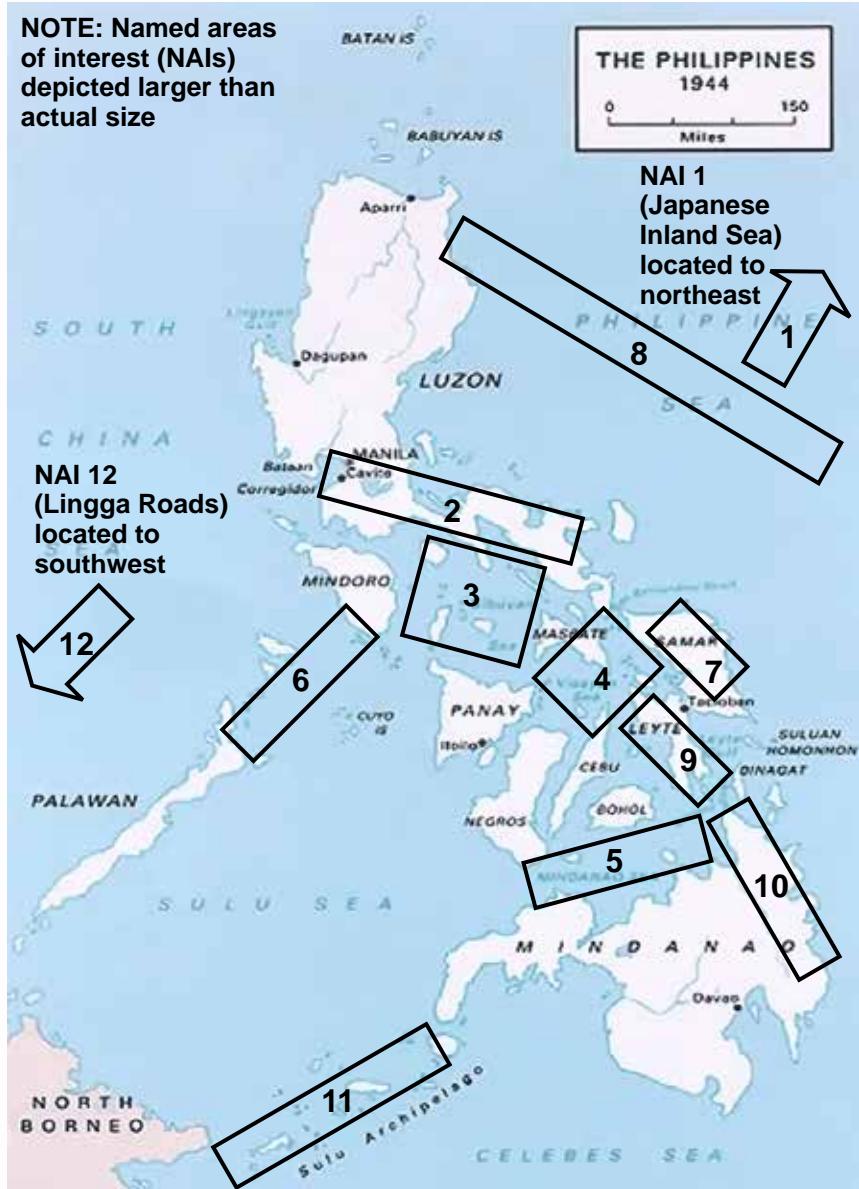


Figure A-10. Leyte Event Template

landing the US Sixth Army at Leyte Gulf, while the US Third Fleet (including the fast carrier striking force) provided the covering force protecting the amphibious operation (see Figure A-12). The US Fifth Air Force provided long-range air support for the operation from bases in Morotai and New Guinea and was preparing to deploy to airfields on Leyte as soon as they were secured.

- b. The Japanese, despite significant aircraft losses, believed that they had inflicted severe damage upon the US Third Fleet during its preparatory carrier air strikes on

NAI	Event	Time		Indicates COA
		Earliest	Latest	
1	Carriers depart Japanese Inland Sea	D+1	D+8	3
2, 9	Additional aircraft redeploy to Leyte	D+1	D+5	1
2	Troop transports depart Luzon	D+2	D+7	2
3, 4, 5	Troop transports move to Leyte	D+1	D+7	2
3, 4, 5	Presence of major surface combatants	D+4	D+8	3
6	Eastward transition of major surface combatants	D+3	D+7	3
7	Ground force movement from Leyte	D+2	D+7	4
8	Southward movement of aircraft carriers	D+4	D+8	3
9	Preparation of additional defensive positions	D+0	D+4	1
9	Departure of ground troops from Ormoc	D+2	D+7	4
10	Ground force movement to Leyte	D+1	D+4	2
10	Evacuation of ground forces to Luzon	D+1	D+8	4
11	Eastward transit of major surface combatants	D+5	D+8	3
12	Surface combatants depart Lingga Roads	D+1	D+5	3

Legend

COA course of action NAI named area of interest

Figure A-11. Leyte Event Matrix

Japanese airfields in Formosa, Okinawa, and Luzon in the month prior to the landing. In response to the US invasion of the Philippines, the Japanese chose to adopt COA 3 and executed a previously prepared counterattack plan known as SHO-1, designed to destroy the US fleet in a single decisive action. The Japanese aircraft carriers (nearly combat ineffective due to inexperienced aircrews) would sortie from Japan and be used as a decoy to lure the US Third Fleet away from Leyte Gulf. The Japanese surface fleet would then attack and destroy the amphibious task force (US Seventh Fleet) off Leyte, thus isolating the landing force (US Sixth Army). The attack would be supported by the remaining Japanese aircraft (army and navy) based in the Philippines, Formosa, and Okinawa using both conventional and kamikaze tactics. Meanwhile, Japanese ground forces would reinforce Leyte and prepare to counterattack the US landing force as soon as the amphibious task force had been destroyed.

- c. The Japanese carrier task force (northern force) under Admiral Ozawa was not limited by military geography, and approached on an axis moving south southwest from

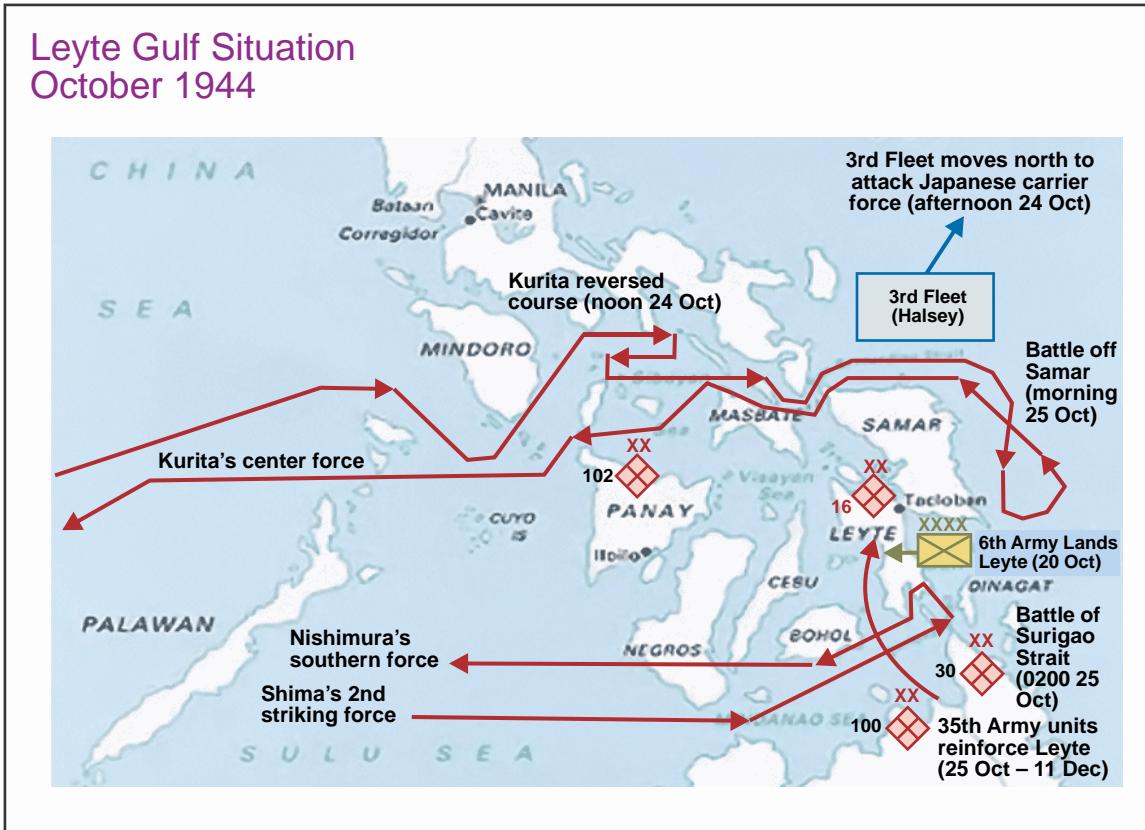


Figure A-12. Leyte Gulf Situation October 1944

Japan into the Philippine Sea. This northern force was to act as a decoy by threatening the US carrier striking force and drawing it away from Leyte.

d. In order to attack the amphibious task force, which was located to the east of Leyte, the Japanese surface fleet had to transit through the Philippine Archipelago (see Figure A-12). The surface fleet was organized into two task forces that would constitute the center and southern forces of the overall Japanese strategy. The center task force, under the command of Admiral Kurita, would use San Bernardino Strait to the north of Leyte. The southern task force, under the command of Admiral Nishimura, would use Surigao Strait south of Leyte. A smaller third task force of surface ships (Admiral Shima's 2nd striking force), which had sailed prior to the battle from Japan, was to follow the southern task force through Surigao Strait.

e. Kurita's center force was detected and heavily damaged by submarine attacks and Third Fleet carrier air strikes on 23 and 24 October. This force was observed to reverse its course as a result of these attacks. At the same time, the Seventh Fleet positioned its battleships and cruisers to defend Surigao Strait from the approach of the two southern task forces. Meanwhile, Ozawa's northern force, with its decoy carriers, was detected in the Philippine Sea. Admiral Halsey, believing reports that the Japanese center force had turned back, responded to what he perceived to be the most dangerous threat by moving Third Fleet northward to attack the Japanese carriers. This left the San Bernardino

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approach uncovered, the 6th Army beachhead on Leyte vulnerable, and the amphibious task force in Leyte Gulf virtually unprotected.

f. During the night of 24-25 October, the Seventh Fleet destroyed both Nishimura's southern force and Shima's 2nd striking force in a surface action known as the Battle of Surigao Strait. Meanwhile, to the north of Leyte, Kurita's center force reversed course a second time, transited San Bernardino Strait during the night, and was approaching Leyte Gulf unopposed. On the morning of 25 October, Kurita's force encountered Seventh Fleet escort carriers and destroyers off Samar. The thin skins, lack of armament, and slow speed of the escort carriers (converted merchant ship and tanker hulls), made them sitting ducks for Kurita's rapidly approaching force. Nevertheless, following two and a half hours of desperate surface combat the Japanese center force (which became disorganized and confused during the engagement) turned back, believing it had sunk a number of fleet carriers and cruisers vice escort carriers and destroyers. Kurita's confusion proved to be the salvation of the defenseless US amphibious task force. Meanwhile, Third Fleet, which was out of range and unable to support the escort carriers off Samar, launched a series of air strikes throughout the day and sank Ozawa's northern force carriers in the Battle of Cape Engano, thus permanently destroying Japanese carrier aviation for the remainder of the war.

g. Despite their heavy losses, the Japanese believed they had achieved a major naval victory. Wildly exaggerated reports of damage from their air attacks and "victory" at the Battle off Samar led them to conclude that the US Sixth Army had now been isolated on Leyte. Using nine convoys between 23 October and 11 December, they reinforced their forces on Leyte by committing elements of five divisions and one independent brigade to the battle. MacArthur's headquarters believed (correctly) that the Japanese had suffered a defeat, and initially thought the purpose of the Japanese convoys was to evacuate vice reinforce Leyte. Once their true purpose was discerned, these convoys were severely attrited by US air attacks. However, the Japanese managed to land over 45,000 troops and prolong organized resistance on Leyte until the end of December.

h. Throughout this period, the US Seventh and Third Fleets had to remain off Leyte to protect the beachhead and the Sixth Army until sufficient airfields could be constructed to enable land-based aircraft to take over the mission. Meanwhile, the Japanese Naval Air Force continued to attack US vessels off Leyte using kamikaze tactics for the first time. While these attacks added to US Navy losses, the battle had already been decided.

"Of this plan [SHO-1] it can only be said that it was contrary to every principle of naval tactics. When we could not possess adequate control of the air, to send the main strength of our surface decisive battle force against the enemy landing point, was a flagrant departure from military common sense. However, under the existing circumstances there was no alternative unless, seeking safety in retreat, we were to supinely sit by and watch the enemy carry out his invasion."

**Admiral Soemu Toyoda, Commander in Chief, Japanese Combined Fleet,
The End of the Imperial Japanese Navy, 1956**

4. Lessons Learned

The Battle of Leyte Gulf sealed the fate of the Japanese Empire. The Japanese Navy was decisively defeated and was incapable of conducting further operations that would endanger US naval superiority. However, the Japanese almost won a major victory with Kurita's center force snatching defeat from the jaws of victory due to its untimely withdrawal. By using this historical example, several important points about JIPOE can be made.

a. Prior to the battle, neither MacArthur nor Nimitz expected a significant offensive reaction from the Japanese Navy. They focused upon what they expected the Japanese to do (COA 1) vice what the Japanese were capable of doing (COA 3). US planners failed to understand the perception of the Japanese leadership (albeit incorrect) that their forces had the advantage due to "heavy" US losses. The JIPOE process, when correctly applied, is designed to focus attention both upon what the enemy is expected to do and is capable of doing, by identifying both the most likely enemy COA and the most dangerous COA.

b. Halsey was vulnerable to deception based upon his belief (backed up by his previous 3 years of war in the Pacific) that the Japanese carriers were the primary threat. In reality, the Japanese carrier-based air threat was negligible due to the heavy losses incurred by Japanese naval aircrews and the lack of sufficient replacements. In JIPOE terms, Halsey failed to anticipate how "wildcard" factors, such as desperation, can modify an adversary's past practices, such as the use of aircraft carriers as decoys. Caution should always be exercised to avoid over-reliance on adversary templating without rigorous all-source analysis to test if the threat remains valid. The use of a red team by both the J-2 and the commander can help identify other alternative enemy COAs viewed through the adversary's cultural lens. JIPOE is not a panacea, and can lead to pitfalls when applied without careful analysis.

c. The US Navy's defensive problem was made easier because of restrictions imposed by the littoral environment of the Philippine Islands upon Japanese maneuver. The JIPOE process is designed to identify this type of advantage prior to the battle so that it can be exploited. On the other hand, the JIPOE process cannot be expected to identify unknown threats such as the use of new tactics (kamikazes). However, once identified, previously produced JIPOE products can be quickly adapted to address new threats.

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APPENDIX B

SOMALIA 1992-1993—A CASE STUDY OF SUPPORT TO STABILITY OPERATIONS AND IRREGULAR WARFARE

*“Me and Somalia against the world
Me and my clan against Somalia
Me and my family against the clan
Me and my brother against my family
Me against my brother.”*

Somali Proverb

1. Background

- a. **By the early 1990s, Somali governmental institutions had completely failed and the Somali people had become fragmented and dependent on foreign aid for basic sustenance.** Following the downfall of Somalia's dictator, Siad Barre, in 1991 chaos ensued in the southern area of Somalia. Civil disorder combined with a devastating drought to bring Somalia to the brink of a humanitarian disaster. Regional warlords established power centers drawing upon clan loyalties, and fought with rival clans for territory and food. Caught in the middle were millions of Somalis who left their flocks and fields and migrated to food distribution centers, further exacerbating the food shortage. Aid shelters were set up by international NGOs to forestall the growing humanitarian crisis. As the civil war deepened in 1992, some warlords began to use food as a source of power, choosing to steal or burn NGO stockpiles at warehouses in the territory of rival clans. Furthermore, since food was a valuable commodity, Somali criminal elements pilfered NGO food supplies for profit. The resulting insecurity and lawlessness caused many of the NGOs to reduce operations in Somalia, further deepening the crisis.
- b. Exacerbating the situation was the extent to which the country was awash with arms that had been provided to the Barre regime by the former Soviet Union. Additionally, Somalia hosted one of the most active illegal arms markets in Africa. Available weapons included vintage heavy weapons such as tanks and armored personnel carriers, antiaircraft artillery, and shoulder-fired IR-guided surface-to-air missiles. Additionally, small arms, mortars, rocket-propelled grenades, small caliber antiaircraft artillery, towed artillery, machine guns, and trailer-mounted multiple rocket launchers were prevalent. “Technicals” (jeeps and light trucks indigenously modified to mount machine guns, light antiaircraft artillery pieces, or recoilless rifles) were common and owned by most clan militias. Technicals added mobility and firepower to the clan militia arsenal, and were often used as a terrorism weapon against hostile clans or rival militias. Additionally, over a million mines had been emplaced by the various clans to shield off their territory.
- c. In the UN, Secretary General Boutros-Ghali urged the UN Security Council to provide for protection of food distribution centers and transportation hubs throughout the country. In April 1992, the UN Security Council established UN Operation in Somalia

(UNOSOM) and authorized a humanitarian support mission under Chapter VI of the UN Charter with 50 UN observers to monitor a tenuous ceasefire among the warring factions. The UN monitors took almost 90 days to arrive, however, and by that time the ceasefire had all but disintegrated. When UNOSOM arrived, only a handful of NGOs remained in Somalia. Many of the remaining NGOs used locally hired guards to protect food storage houses, a practice that paradoxically undermined security. The locals that were hired owed allegiance to one warlord or another, and would inevitably aid their clan in stealing food at the expense of other clans. This situation caused the clans that were left out to be even more determined to thwart the aid effort.

d. In July, a US effort to airlift 28,000 tons of food and supplies directly to airfields in the interior of the country in coordination with UNOSOM briefly improved the situation, but looting and banditry continued to take a toll on the remaining relief organizations. At most, only 40 percent of the food delivered actually reached the intended population. Similarly, 500 Pakistanis airlifted to Mogadishu by the US were unable to open LOCs from the port facility due to armed opposition. In the face of these obstacles and the deepening humanitarian crisis, on 25 November 1992 President Bush offered to lead a UN backed military force to protect international relief aid in Somalia. The UN Security Council approved resolution 794 on 3 December creating the UN Unified Task Force (UNITAF)—known in the US as Operation RESTORE HOPE—and authorized it, under Chapter VII of the UN Charter, to “use all necessary means to establish a secure environment for humanitarian relief operations in Somalia as soon as possible.”

2. Joint Intelligence Preparation of the Operational Environment—The Process

Although a formal JIPOE process did not exist at the time, US forces operating with UNITAF conducted an extensive IPB effort that included both geospatial and systems perspectives. This analysis provided a holistic view of the OE and laid the groundwork for sound, subjective advice to the RESTORE HOPE commander.

a. Define the OE

(1) **Mission Analysis.** Commander, US Central Command stood up JTF RESTORE HOPE on 3 December 1992. The JTF became the core element of UNITAF, a 21 nation coalition involving approximately 37,000 soldiers. The first UNITAF contingent arrived in Mogadishu on 10 December and established a headquarters at the former US Embassy. By the fall of 1992, an estimated 1.5 million Somalis were internally displaced persons (IDPs) and at risk of death from disease and famine. Major IDP camps were located in large towns as shown in Figure B-1. An additional 300,000 Somalis were in refugee camps outside Somalia proper. The JTF commander, attempting to bound the task, established the primary mission as:

- (a) Provide logistic and security support to NGOs engaged in providing relief supplies to internally displaced populations.
- (b) Secure Mogadishu port and airfield.

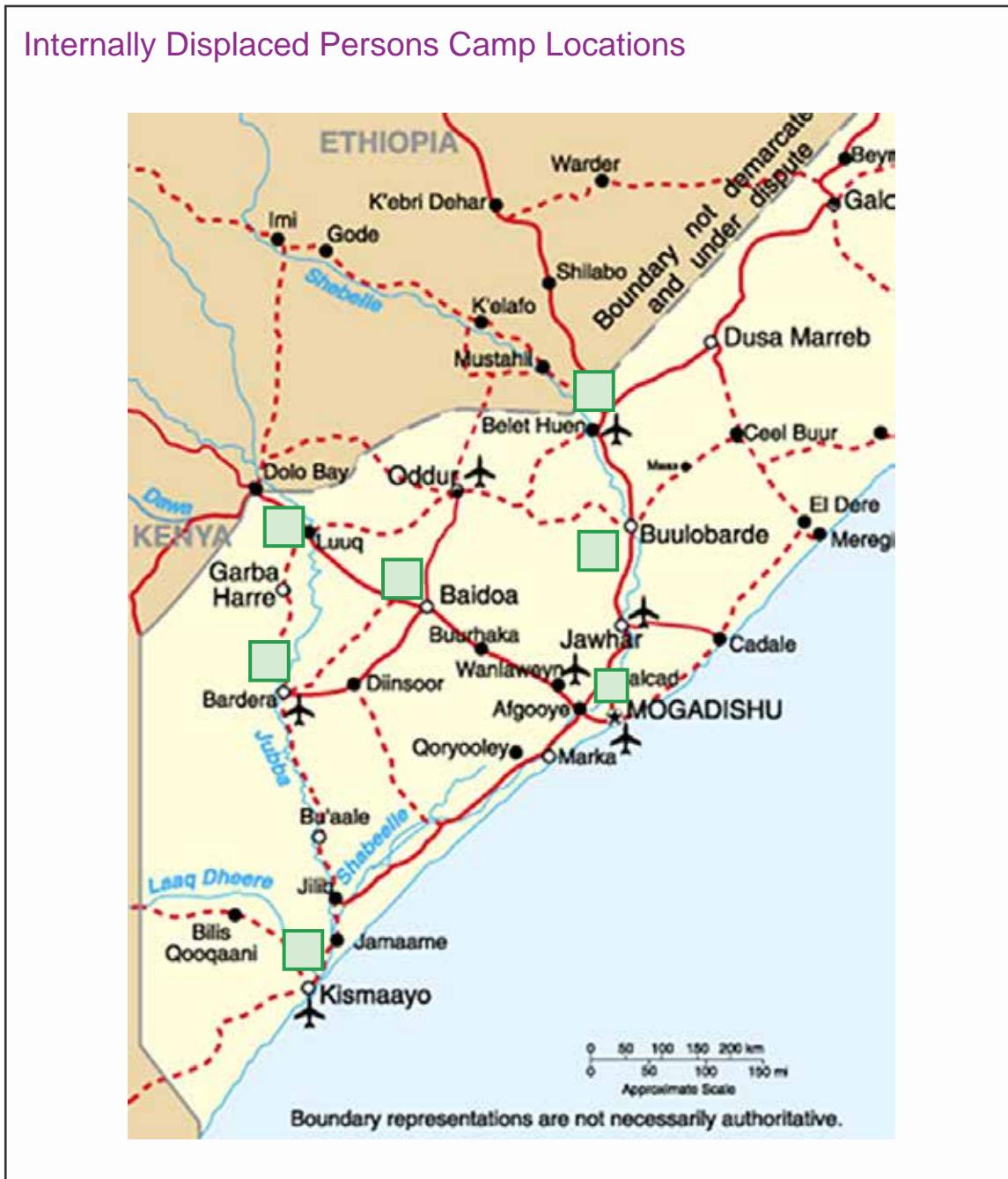


Figure B-1. Internally Displaced Persons Camp Locations

(c) Secure LOCs into the interior of the country for relief supplies to traverse.

(d) Provide security escorts for relief supply convoys. After establishing control, the JTF commander intended to turn over operations to the UN and withdraw. The JTF purposefully deemphasized military operations against potential belligerents.

Appendix B

Discussions with local warlords revealed that the warlords would not oppose an expanded humanitarian relief effort, but would view negatively an outside intervention in their political struggles.

(2) **Boundaries.** Somalia is a long, narrow country located on the Horn of Africa. It has a total land area of 246,200 square miles, making it slightly smaller than Texas. It has a 36-mile border with Djibouti in the northwest, a 994-mile border with Ethiopia to the west and northwest, and a 424-mile border with Kenya in the southwest. To the east, Somalia borders on the Indian Ocean, and to the north it borders on the Gulf of Aden. Its coastline is 1,880 miles long, which is nearly as long as the US Atlantic Coast (2,069 miles).

b. Describe the Impact of the OE

(1) **Land Domain.** Somalia is a land of few contrasts. Most of the country is desert, and the dominant terrain features are flat plateau surfaces and plains. The only significant mountains are the rugged east-west Karkaar mountain ranges in the far north. Somalia has only two major rivers, the Webi Shabeelle and the Webi Jubba, both of which are in the south. For this reason, the south is home to Somalia's largest sedentary population and the economy is a mixture of agriculture and livestock herding. Northern Somalis are nearly all pastoral nomads or seminomads. This difference caused the prolonged drought and famine of 1991-92 to hit southern Somalia much harder than the north. It also drove the UN to focus its military relief operations in the south. The open, level terrain and clear weather favored operations by heavily armed forces, and this ultimately helped convince the Bush Administration to send ground forces. The biggest problems facing US forces were the standard hardships of desert warfare (see paragraph 2.b.(5) "Weather") and a number of dangerous diseases found in the region. These include bacterial and protozoal diarrhea, hepatitis A and E, typhoid fever, malaria, dengue fever, schistosomiasis, tuberculosis, and rabies. A primary concern for JTF RESTORE HOPE was the ability to transport relief supplies from ports and airfields, where they arrived, to internally displaced populations residing in refugee camps. Somalia had a very poor transportation and communication infrastructure. The ongoing conflict had destroyed much of the country's meager infrastructure. Furthermore, because of continued civil unrest, travel within Somalia was very dangerous. Without a strong central government to fund and oversee restoration, little was rebuilt; roads and airfields remained in poor condition. Somalia's ports and airfields were not under government control; agreements with individual clans had to be secured for use of transportation facilities. Access was subject to intermittent disruption as clans vied for control. In 1991, Somalia had only 1621 miles of paved roads and 12,112 miles of unpaved roads. In contrast, Texas, which is roughly the same size, has over 300,000 miles of roads. Existing roads were underdeveloped, normally very narrow (16 feet wide), and travel required 4-wheel-drive vehicles. Roads connecting the ports with the interior were not well maintained. As shown in Figure B-2, a paved road extended from Mogadishu to Jilib in the south, 80 miles from the major southern port at Kismaayo. Paved roads also ran from Mogadishu through Baidoa to Dolo Bay, and Mogadishu through Buulobarde to Belet Huen in the southern interior of Somalia. An additional paved road extended north to south through the interior of the country from Oddur

Southern Somalia Road Infrastructure



Figure B-2. Southern Somalia Road Infrastructure

through Baidoa to Bardera. The remainder of the roads in the hard-hit south were crushed bituminous or graded earth. With the government's fall, the transportation system's quality declined. There was no reliable indigenous transport capability to provide large-scale movement within the country. Compounding the problem, there was no rail infrastructure.

(2) **Maritime Domain.** There was no organized naval threat in Somalia. The only threats were militia attacks on ships in port or entering the harbors. The principal maritime concern was a severe lack of port facilities. Somalia has a long coastline, but it had only three deepwater ports (Berbera, Mogadishu, and Kismaayo) and a few smaller ports. Shore facilities were poor, and crews had to accommodate all off-load requirements with their own ships' gear. More than 90 percent of aid to Somalia passed through these ports. However, given Somalia's instability and clans' failures in managing the ports, security was a concern. The port at Mogadishu, for example, could only handle one ship at a time (see Figure B-3). These limitations seriously affected relief shipments.

Mogadishu Port



Mogadishu, the principal port of Somalia, is on the southeast coast. The port has a large, artificial break-water providing six berths for deep-sea vessels. Three berths are along the inside breakwater to the south and the remaining three are along the mainland quay to the north. Berths are 170 to 198 meters (560 to 650 feet) long. With a reported depth of 8 to 11 meters (26 to 36 feet), the port is incapable of accepting fully laden fast sealift ships or large, medium-speed roll-on/roll-off vessels. Mooring and unmooring of vessels is restricted to daylight hours.

The water shallows quickly on approach to the shore. The swell can lead to strong surging alongside and moorings must be tended regularly. Anchorage is available 800 meters (2,600 feet) southwest of the breakwater head in depths of 12.5 meters (41 feet). The winds and currents vary from southwest to northeast depending on the season, and strong currents may be encountered. The tidal range is 2.5 meters (8.2 feet) maximum.

Figure B-3. Mogadishu Port

(3) **Air Domain.** Somalia's air domain resembled its maritime domain. A lack of significant air defenses and the desert climate meant that US airmen would have excellent flying conditions almost year round. The problem for relief operations was a lack of operational airport facilities, air control operations, or cargo handling equipment. On paper, Somalia had eight airports with paved runways and 50-60 more with unpaved strips. In reality, these facilities were in the same condition as the seaports (see Figure B-4). For example, the Mogadishu airport was capable of handling no more than two aircraft at a time. These space limitations were especially dangerous because there was also no centralized airlift control provided for either international relief organizations or US forces. Somalia's degraded airfields also lacked navigational aids to facilitate operations at night and in bad weather. As a result, airlift operations were limited to day/visual flight rules/conditions only.

(4) **Information Environment.** By 1991 Somali literacy rates were extremely low. Only approximately 24 percent of Somalis could read in 1990. An ambitious literacy campaign in the 1970s somewhat improved the historically low literacy rate, but lack of participation by nomadic tribes dampened overall success. Civil strife in the late 1980s further eroded literacy. Furthermore, less than ten percent of Somalis could read English or Italian, so that printed media such as newspapers or leaflets would be required in multiple languages in order to reach any significant number of the target audience. Therefore, most mass communication was carried out over airwaves in either television or radio format. The TV and radio stations in southern Somalia and Mogadishu were dominated by the warring factions. The most active faction on the airwaves was the Somali National Alliance (SNA) under General Mohammad Farrah Aideed. Aideed's SNA had seen the benefit of using mass media to spread its message and coordinate efforts, and had taken over the only TV station in Mogadishu and three radio stations. The United Somali Congress (USC), under Ali Mahdi Mohammad, had retained control of two radio stations in Mogadishu and additional radio stations in regions outside of Mogadishu, including the riverine regions west of Mogadishu and the towns of Baidoa, Oddur, and Belet Huen. Since most Somalis owned radios, and a fairly large portion in the urban areas had access to televisions, the primary means the warring factions had to communicate with the Somali people were through these media. They used radio and television broadcasts to consolidate attitudes in favor of their positions with respect to the international community and other warring factions, and in some cases to spur action by the masses in support of a preplanned action or in response to a particular event. Most infrastructure in Somalia was severely degraded during the civil strife of the late 1980s and early 1990s. This included landline telephone cables and switching stations. The result was that most telecommunications were conducted through a cellphone network which existed primarily in Mogadishu and a few other urban areas. One of the primary uses of the cellphone network by the warring factions was to acquire information from observers and scouts, and to issue orders and instructions to subordinate members. Members of warring factions exhibited a great deal of autonomy in day-to-day operations, but routinely responded to calls for assistance from faction leadership.

Airfields and Ports

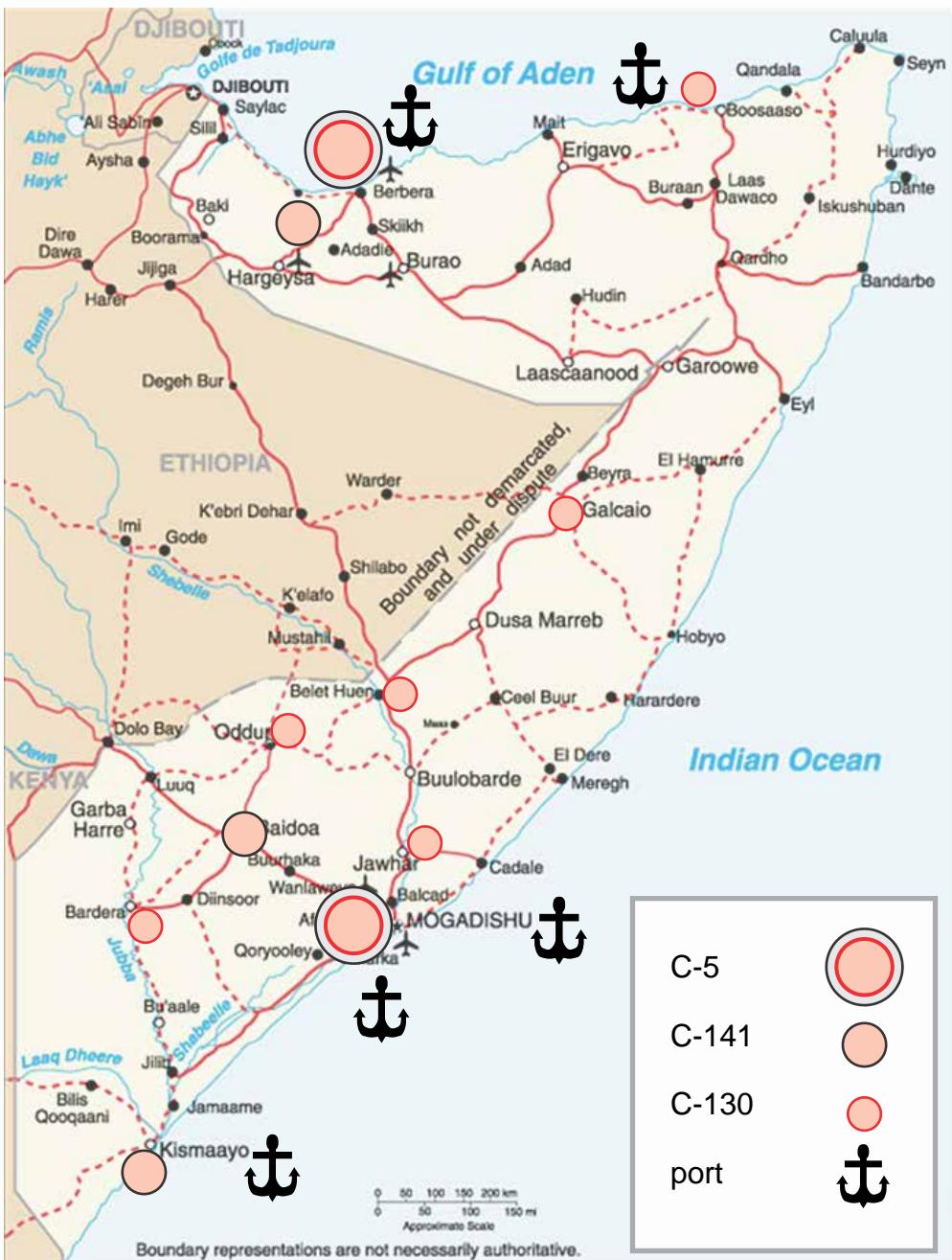


Figure B-4. Airfields and Ports

(5) **Weather.** As indicated in Figure B-5, Somalia is hot and arid for most of the year. The mean daily maximum temperatures throughout the country range from 85 to 100 degrees Fahrenheit, except in the higher elevations and along the coast. There are four seasons in Somalia, two wet and two dry. The seasons are marked by northeast and southwest monsoon winds and the lulls that occur between them. The first season begins in late December or early January and is marked by hot, dry, and dust-laden northeast monsoon winds. It is considered the harshest season of the year. The second season runs from March to May and is the lull between the monsoon seasons. It is the hottest period of the year in southern Somalia and the period of heaviest rainfall. The third and longest season extends from June through August. The southwest monsoon during this season tempers the climate with cool breezes from the Indian Ocean. The fourth season runs from September through December and is another lull between monsoons. Heat and humidity can be expected along with light intermittent rains. Somalia's desert climate, combined with its open terrain, provide an ideal environment for military forces to operate either in relief supply distribution or counterinsurgency. The main problem it posed to US forces were those common to all desert areas: extreme heat, lack of water, and blowing dust or sand. No one believed that these would be a "show-stopper" in Somalia. Decades of training on military ranges in the southwestern US and the stunning US victory over Iraq in 1991 left little doubt that US forces could handle desert warfare.

(6) **Sociocultural Factors.** Far more problematic than the geography, transportation infrastructure, or desert climate were the challenges presented to the coalition forces by Somalia's sociocultural factors.

(a) **Population.** Somalia had an estimated 7.7 million citizens in 1991, not including Ethiopian refugees. About three-fifths of the population were predominantly

Somalia Seasons			
Season	Monsoon Pattern	Climate	Local Name
January – March	Northern monsoon	Hot, dry, blowing dust	
March – May	Lull	Hot, wet – Harshest period in southern Somalia	Gu
June – August	Southwest monsoon	Hot, dry	
September – December	Lull	Heat and humidity Intermittent rains	Dayr

Figure B-5. Somalia Seasons

nomadic herders; about one-fifth were farmers inhabiting the river areas of southern Somalia; another one-fifth were urban (vast majority in Mogadishu). The urban population of Mogadishu swelled during the civil strife in the late 1980s and early 1990s to approximately two million. The extended drought, civil strife, and famine disproportionately affected these urban dwellers, along with the farmers.

(b) **Ethnic Groups.** Somali society is homogeneous in nature. Ethnic Somalis are united by language, culture, and devotion to Islam. The overwhelming majority of Somalis trace their genealogical origin to the mythical founding father, Samaale or Samaal. Even clan-families, whose members in many cases do not trace their lineage directly to Samaal, readily identify themselves as Somali. Most Somalis outside urban areas are nomadic herders, with the exception of two primarily agricultural clan-families (Digil and Rahanwayn).

(c) **Languages.** Common Somali is most widely used. However, several dialects are spoken. Less than ten percent speak English and Italian. Most university-educated Somalis are familiar with Italian. Arabic is used in religious contexts. Indigenous languages include various dialects of Afar and Boni.

(d) **Religion.** Most Somalis believe they are descendants of noble Arabic lineages and the family of the Prophet Mohammad. The former Somali state was officially Islamic; the overwhelming majority of Somali nationals are Sunni Muslims. Less than one percent are Christian. By the early 1990s the Salafist brand of fundamental Islam had made inroads into Somali culture. An Islamist militant group known as al-Itihad al-Islamiya sought to create an Islamic state in the Horn of Africa, and was partially funded by the al-Qaeda terrorist organization.

(e) **Clan Structure.** The history of the Somali people is inevitably tied to the various tribes, or clans, and their subclans (see Figure B-6). Although Somalis are homogeneous and tied to common ancestors that migrated from the Ethiopian highlands thousands of years ago, they had been influenced by the trading communities of the Indian Ocean, especially the Persians, Omanis, and Yemenis. Although the nomadic clans, such as the Darood in central and southern Somalia, tend to be more broadly dispersed, most clan groups have fairly well-defined geographical boundaries: the Hawiye are located in the Mogadishu area; the Isaaq in the north, the Dir in the northwest; and the Digil and Rahanwayn in the river areas of the south. The nomadic clan families—the Dir, Isaaq, Hawiye, and Darood—believe they are the “true Somali,” and therefore have a higher status in Somali society. The southern riverine agrarian groups only achieved a measure of political equality under Barre.

(f) **Government and Politics.** In 1991, Somalia was nominally under an interim provisional government established by the Executive Committee of the USC and headed by the provisional president: Ali Mahdi Muhammad. In reality, factional infighting placed large segments of the country effectively under the control of as many as 30 rival clans and subclans.

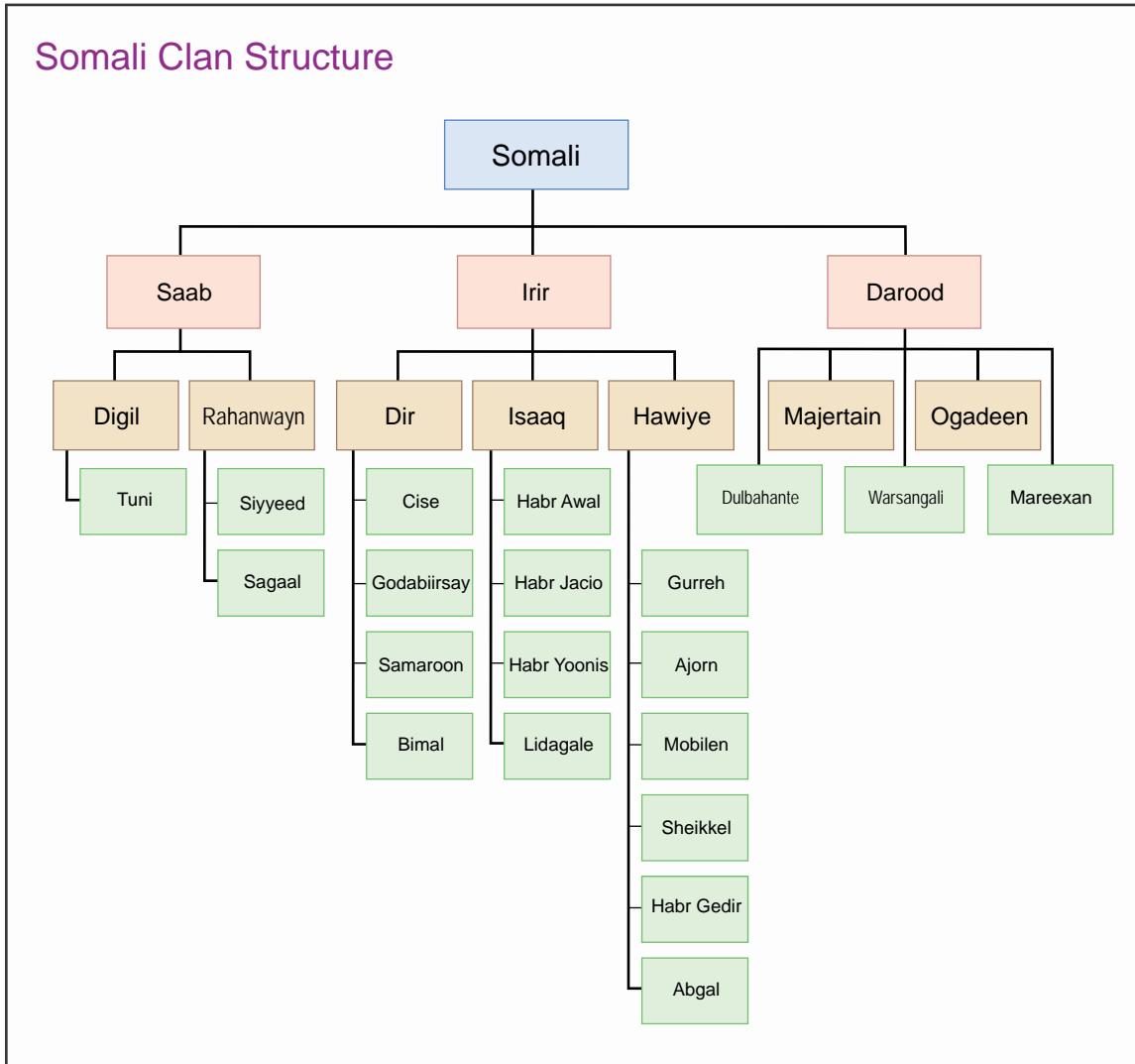


Figure B-6. Somali Clan Structure

(7) **Systems Network Analysis.** Based on an analysis of the sociocultural factors discussed above, analysts may visually depict normal relationships among various elements (links and nodes) within the Mogadishu environment. Some of these connections involved the various clans and factions with local gangs, locally hired guards, critical logistics and information environment nodes, Islamic violent extremist elements, and IGOs and NGOs. This baseline analysis depicts the normal interactions among multiple system nodes. For illustrative purposes, a simplified version of a consolidated systems overlay is depicted at Figure B-7.

c. Evaluate the Adversary and Other Relevant Actors

(1) **Warring Factions.** Overlaying the clan structure of Somalia in 1991 was a complicated set of shifting alliances among various warring factions. These warring factions, led in most cases by powerful warlords with well-armed militias, were geographically based (see Figure B-8). Prior to the fall of Siad Barre regime in January

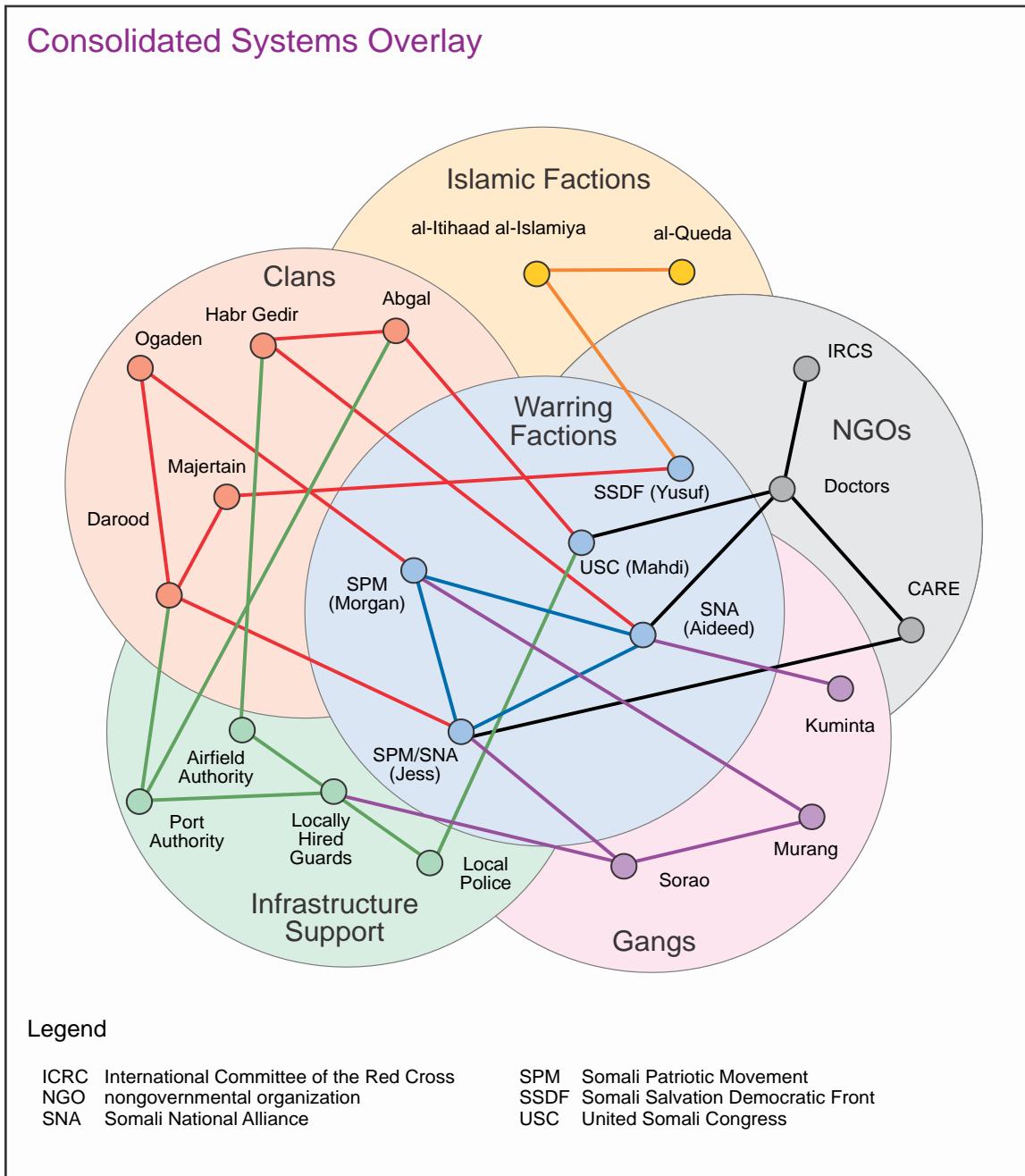


Figure B-7. Consolidated Systems Overlay

1991, there were 84 districts organized into sixteen administrative regions and the capital. Each region had three to six districts, with the exception of the capital, which was subdivided into fifteen districts. There was **no effective government after the fall of Barre**. Tribal clans dominated by local warlords occupied the former districts. The central government authority at Mogadishu was immediately challenged by the Somali National Front (SNF), which in June 1991 declared the independent Republic of Somaliland in the former territory of British Somaliland in northern Somalia. The constitution of 1979 was nominally in force pending a new constitution proposed by the

Faction	Leadership	Numbers	Weapons	Location	Dominant Clan
United Somali Congress/ Somali National Alliance	Mohammad Farrah Hassan AIDEED Oman Hassan Ali ATTO	5,000 – 10,000	Armored vehicles, recoilless rifles, artillery, mortars	Central Somalia including South Mogadishu	Habir Gedir
United Somali Congress – Mahdi	Ali MAHDI Mohammad	Approx. 8,000	Small arms and technical	Central Somalia to the north of Mogadishu	Abgal
Somali Patriotic Movement/ Somali National Alliance	Ahmed OMAR JESS	Approx. 2,000	Small arms and technical	Southern Somalia Kismaayo/Jilib	Darood
Somali Salvation Democratic Front	Abdullahi YUSUF Mohammad ABSHIR Musse	2,000 – 5,000	Armored vehicles, artillery, technicals	North Central Somalia between USC and SNF areas	Majertain
Somali Patriotic Movement – Gabio	Mohammad Siad Hersi MORGAN	Unknown	Small arms and technical	Southern Somalia Kismaayo	Ogaden
Somali National Front	Ahmed Warsame Mohammad HASHI	2,000	Heavy weapons, artillery, mortars	Northwestern Somalia	Isaaq

Figure B-8. Somali Warring Factions

provisional government. A constitutionally mandated national legislature known as People's Assembly was inactive since January 1991. In Mogadishu, the USC faction led by Aideed contested the authority of the USC Executive Committee to form an interim government and establish a rival government in southern Mogadishu. This action forced Ali Mahdi's government to retreat to northern Mogadishu. Backed by overwhelming US and UN power, Ambassador Robert Oakley effectively established a cease-fire between the warring factions. Under this arrangement, Aideed and Ali Mahdi also agreed to canton their heavy weapons and technicals in authorized weapons storage sites that were periodically inspected by UNITAF.

(2) Perceptions Toward UN Relief Operations. There were varying degrees of hostility toward the UN and international relief operations across the country depending on the warring faction occupying the area and its leadership. Ali Mahdi and his USC was unpredictable but generally supportive of the UN relief efforts. In the north, the SNF had withdrawn from the government in Mogadishu and had no objection to relief operations in its area as long as the UN didn't threaten its independence movement. The Somali Salvation Democratic Front, in the area of Somalia sandwiched between Ali Mahdi's USC territory and the SNF, were generally pro-UN but also had links to al-Itihad al-Islamiya. The warring factions were located in the region from south Mogadishu to the port city of Kismaayo and as far west as Baidoa and Bardera. The primary belligerent was the SNA faction of the USC led by Mohammed Farrah Hasan Aideed and Oman Hassan Ali Atto. Aideed and Atto disapproved of any outside intervention in Somalia. Aideed was a former general in the Barre government with considerable influence in the powerful Habr Gedir clan who had broken with the nominal government formed by Ali Mahdi. Aideed was gaining wealth and power from the country's ongoing chaos and saw intervening UN forces as a threat to his power base, maintained by threat and intimidation and the ability to withhold food. Aideed's allies, the SNA/Somali Patriotic Movement (SPM) led by Omar Jess and the SPM-Gabio led by Mohammad Siad Hersi Morgan, occupied the territory to the south of the capital. This was a primary issue for the UN relief effort, as they occupied the main transportation hubs in southern Somalia, and therefore, had to be dealt with.

(3) Adversary/Relevant Actor Models. A systems perspective adversary/relevant actor template is developed using a modified association matrix format that depicts postulated future new links, or modifications to existing links, that would be indicative of specific COAs. These postulated links are based on knowledge of past practices or logical assumptions regarding what the adversary and other relevant actors may be expected to do in certain situations. For example, a resumption of fighting among the warring factions might be indicated by a breakdown of the existing "alliances" between Aideed, Morgan, and Jess as depicted in Figure B-9. Likewise, the growth of an Islamic violent extremist movement might be indicated by attempts by al-Itihad al-Islamiya to establish new relationships with the USC, SPM, and SNA.

(4) Adversary/Relevant Actor Situation. Mogadishu was considered a key hub in the transportation network for relief supplies into Somalia. Most of the relief supplies for central and southern Somalia, the areas hardest hit by civil strife and famine, pass through Mogadishu and its seaport and airport. Mogadishu was also the location of the main fault line between warring factions represented by the SNA (Aideed) on the one side, and the USC (Ali Mahdi) on the other. Therefore, the situation in Mogadishu for UN humanitarian relief was critical to the overall operation. Consequently, a detailed analysis of the Mogadishu area, including overlays for regional Mogadishu were created as shown in Figures B-10 through B-15.

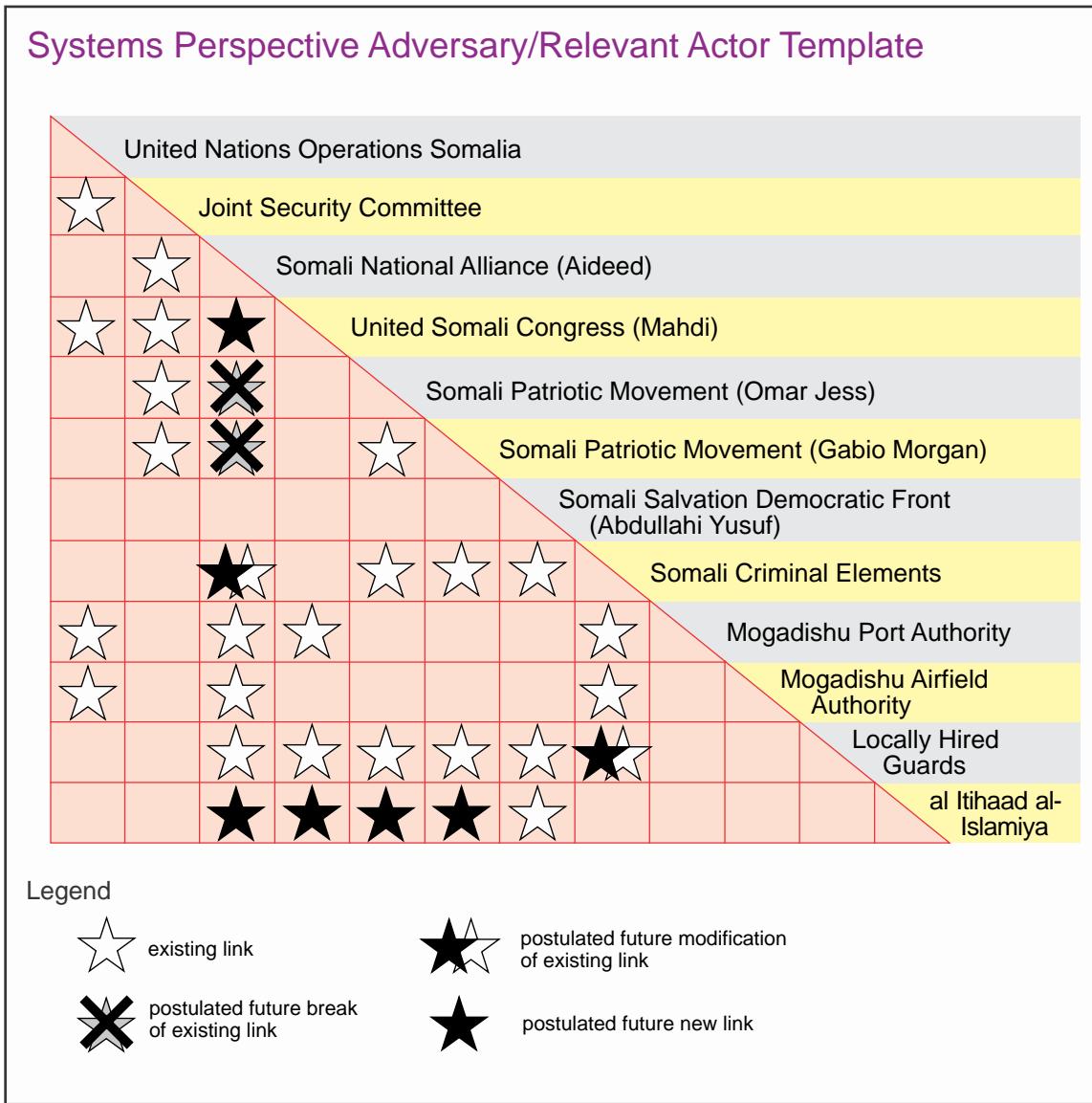


Figure B-9. Systems Perspective Adversary/Relevant Actor Template

Map of Mogadishu

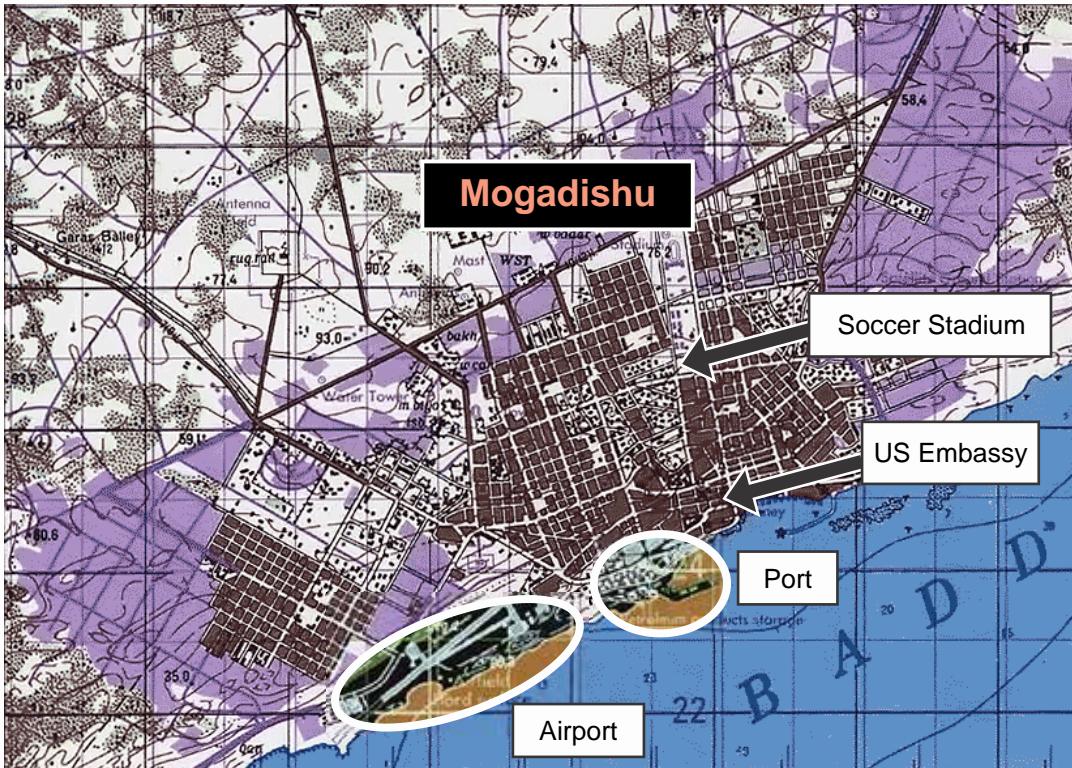


Figure B-10. Map of Mogadishu

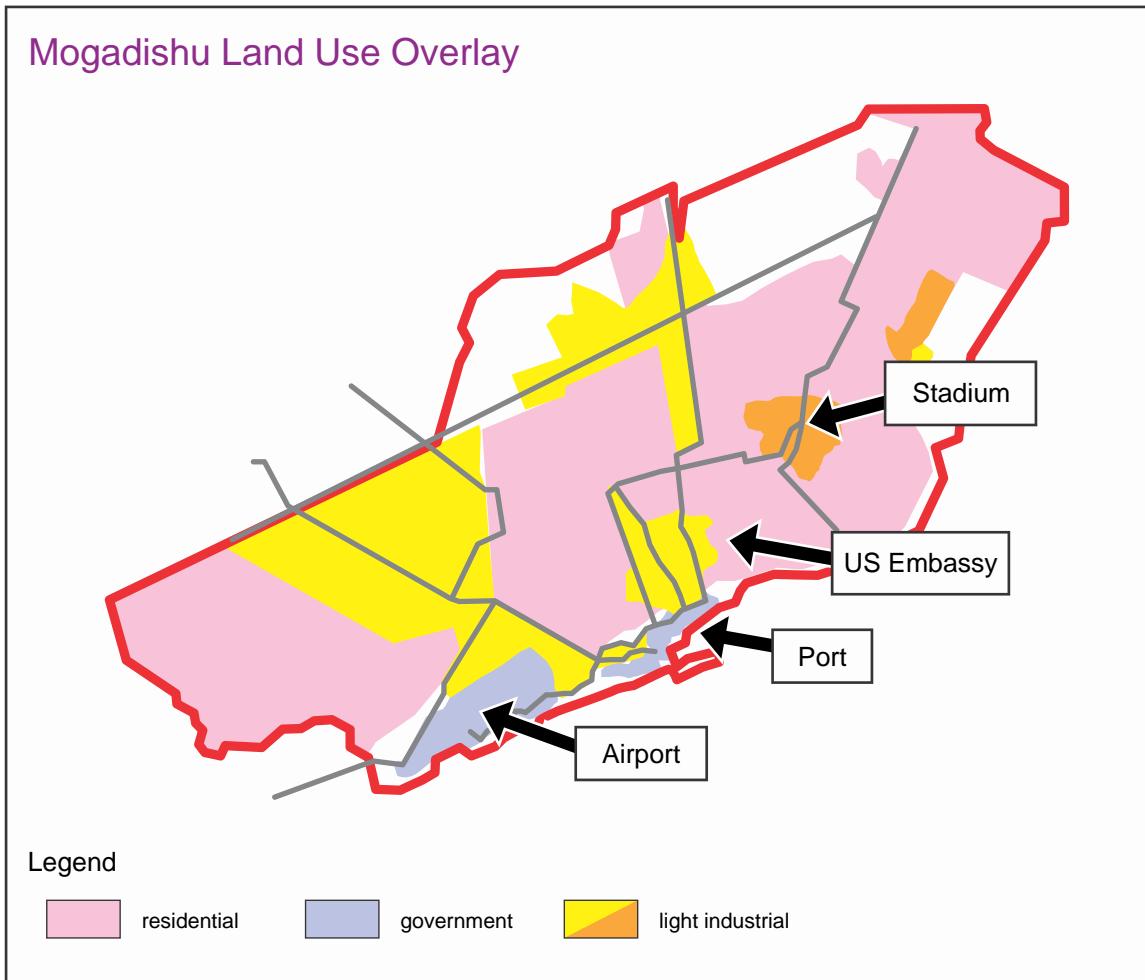
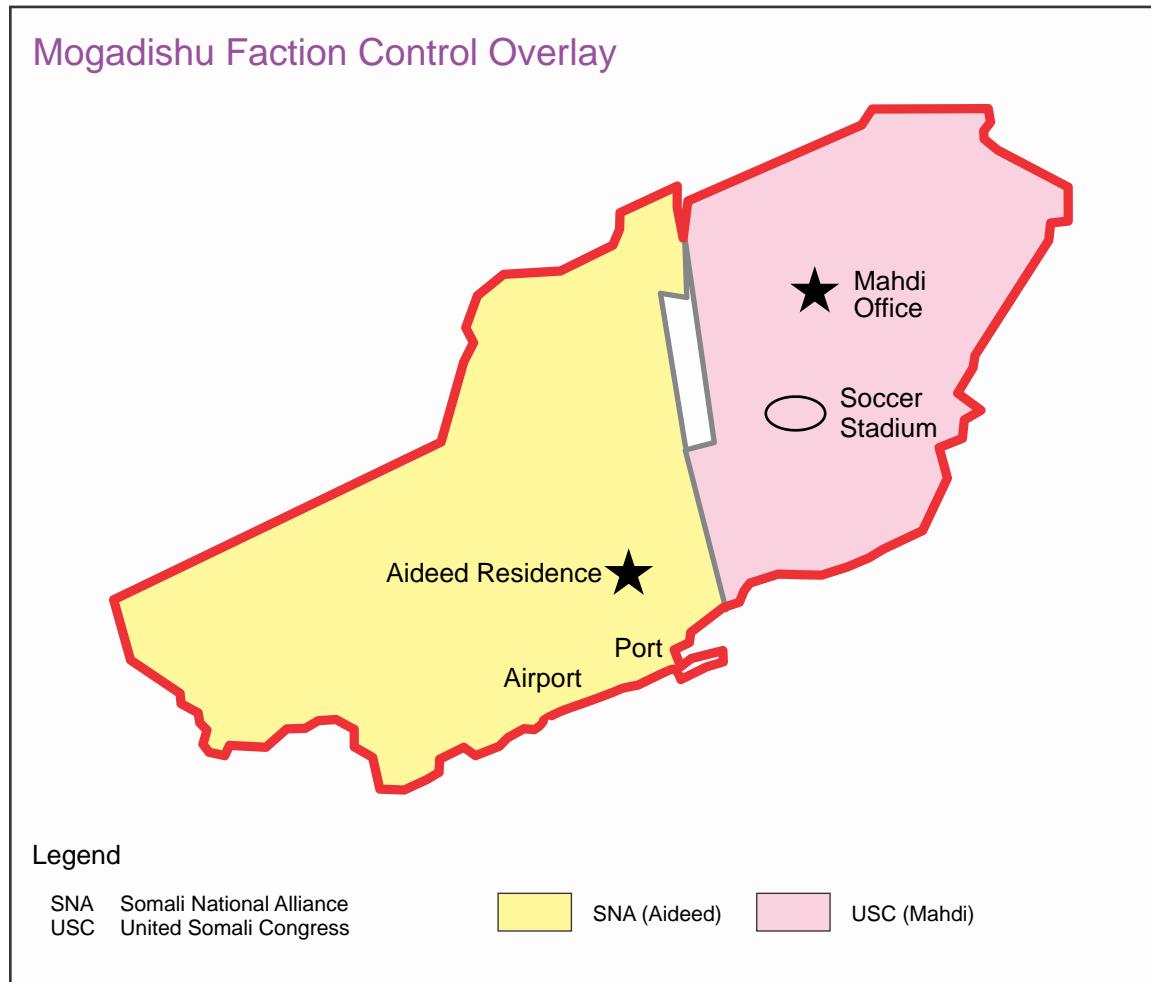


Figure B-11. Mogadishu Land Use Overlay



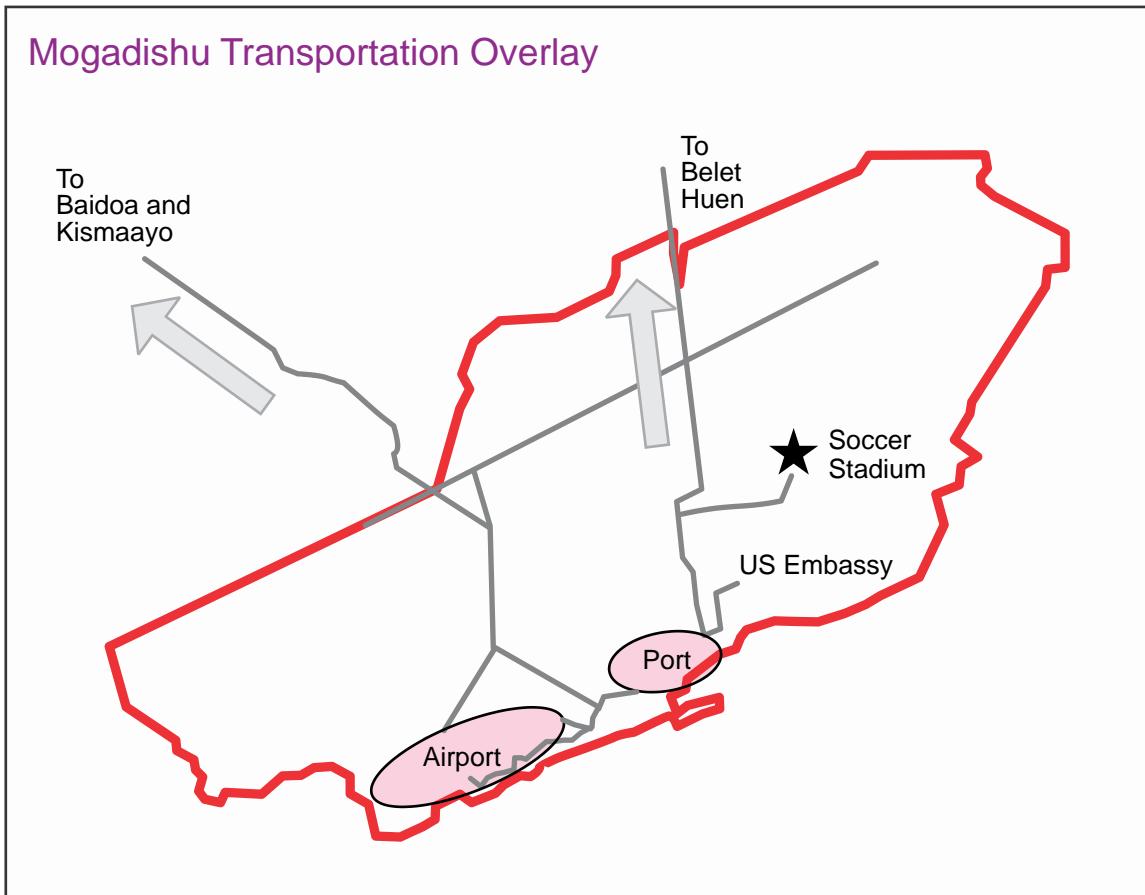


Figure B-13. Mogadishu Transportation Overlay

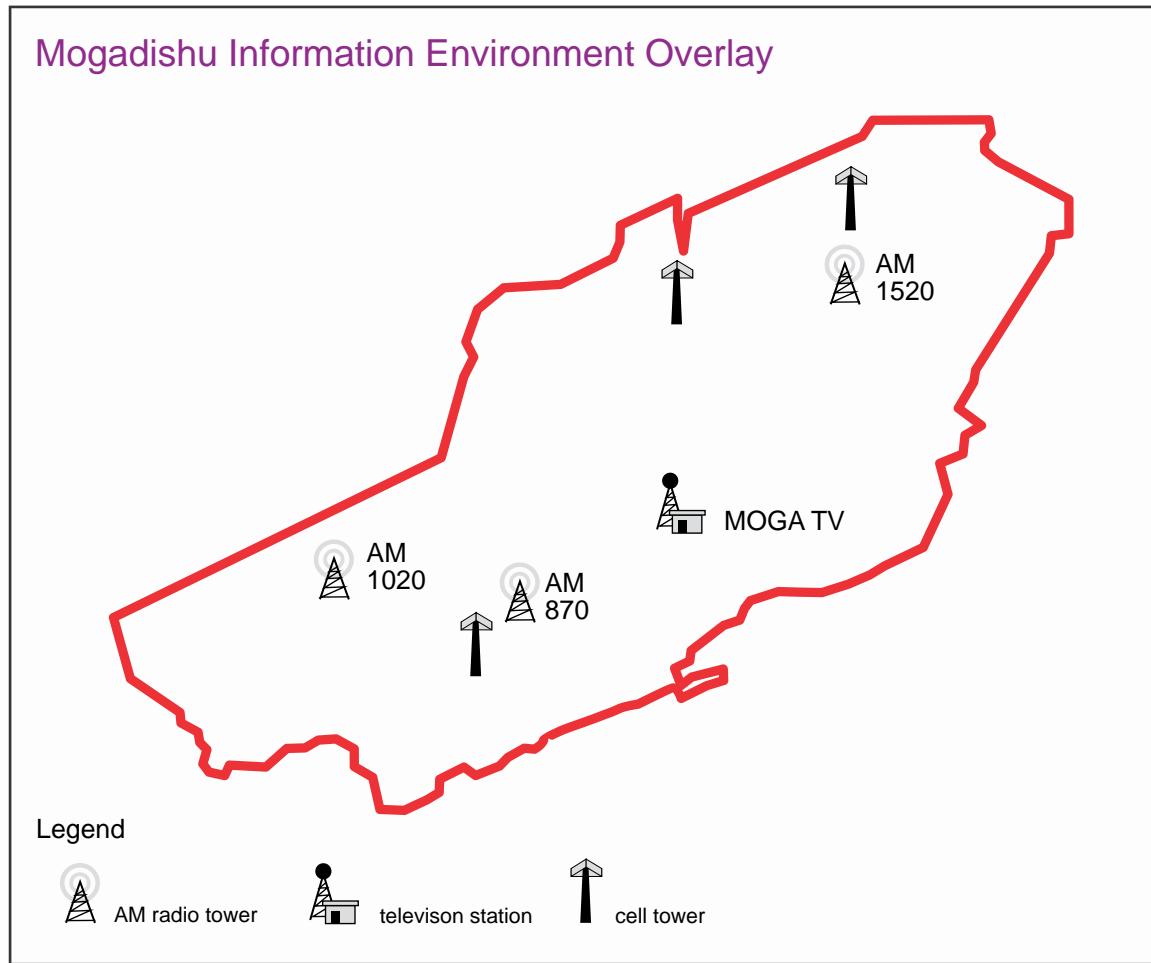


Figure B-14. Mogadishu Information Environment Overlay

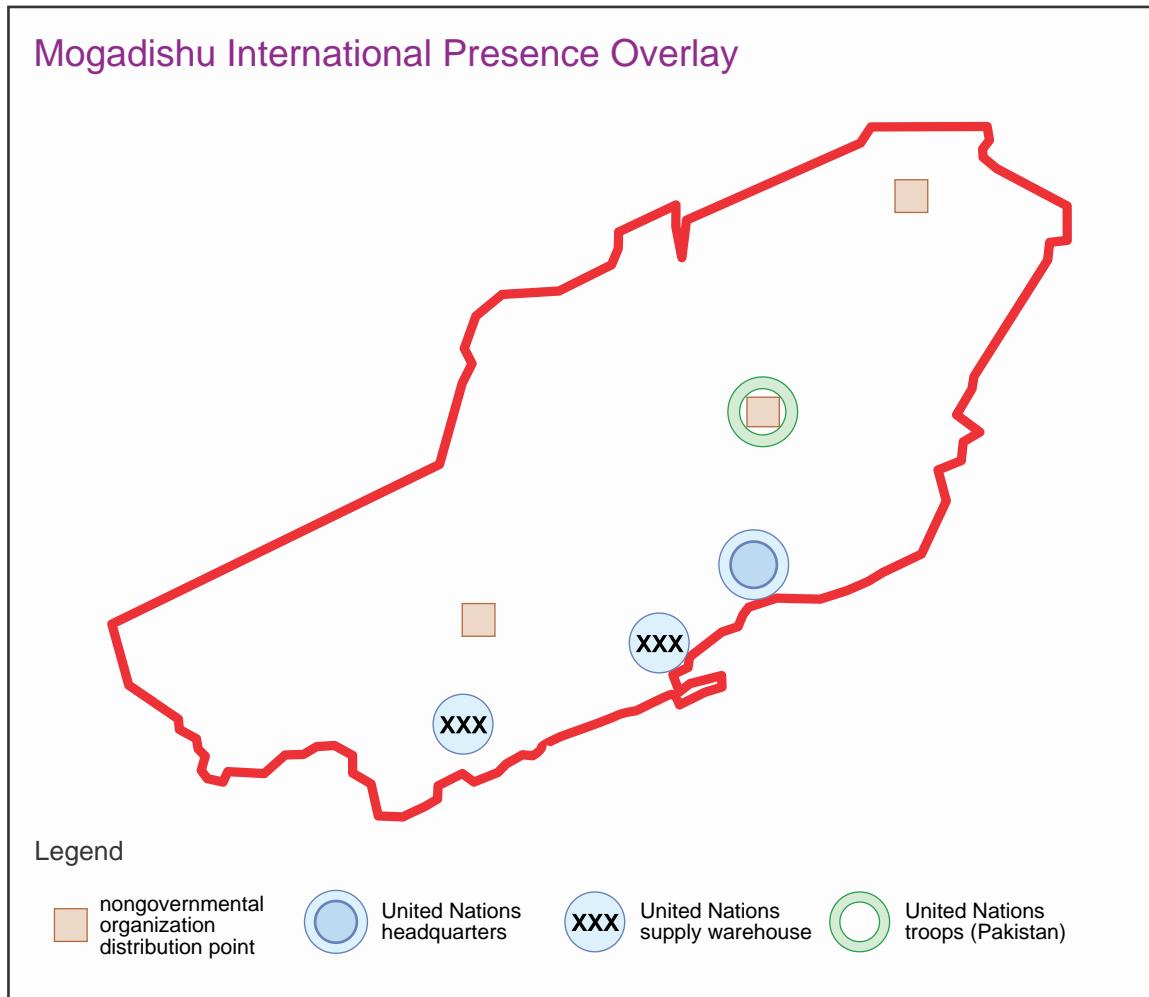


Figure B-15. Mogadishu International Presence Overlay

(5) COG Analysis. In order to perform a detailed COA analysis on the potential for warring factions to become involved in opposition to coalition famine-relief operations, JTF RESTORE HOPE personnel initially attempted to determine the COG for each of the warring factions involved in the ongoing strife. The objective of the COG analysis was to gauge for the JTF leadership the potential for negotiated settlement which could lead to improved stability in Somalia. JTF intelligence analysts relied upon information from both traditional intelligence channels and external sources to perform COG analysis. Much of the most pertinent data was acquired from Ambassador Oakley, who had conducted personal negotiations with the leaders of various warring factions in the period preceding Operation RESTORE HOPE, and had access to detailed and current information on the prominence and attitudes of faction leaders. Other information came from NGOs represented in the UN Humanitarian Operations Center and RESTORE HOPE Civil-Military Operations Center (CMOC) engaged in the relief operation on the ground. NGO personnel operated daily in the Somalia environment and had frequent contact with local officials, many with ties to factions and associated militia. Contact

Appendix B

with NGO personnel occurred frequently through interactions with the CMOC. Although unable to levy collection requirements on NGO personnel, the CMOC obtained valuable information through routine information exchanges in the normal course of conducting NGO support coordination. Finally, some coalition partner members engaged in Operation RESTORE HOPE had a unique understanding of the historical background of the Somali nation and the current political situation in Somalia developed over time through a long history of dealing with the local populace. This multinational analytic effort with other coalition members enabled the JTF J-2 to estimate the most likely perceived COGs for individual faction leaders, as shown in Figure B-16.

Center of Gravity Analysis		
Faction Name	Leadership	Center of Gravity
United Somali Congress/ Somali National Alliance	Mohammad Farrah Hassan AIDEED Oman Hassan Ali Atto	Control of Habr Gadir Clan (one of the strongest and most prominent clans in Somalia) Reputation as a capable Somali general Access to weapons/resources to maintain clan loyalty
United Somali Congress – Mahdi	Ali MAHDI Mohammad	International Legitimacy Relationships with UN/NGOs for relief supplies Access to food/resources for patronage
Somali Patriotic Movement/ Somali National Alliance	Ahmed OMAR JESS	Association with Darood Clan Reputation as a military leader Geographical base and access to Port of Kismaayo resources Alliance with Aideed
Somali Salvation Democratic Front	Abdullahi YUSUF Mohammad ABSHIR Musse	Clan base (Majertain) Large militia and weapons Geographical center Food/Money generated from protection of UN/NGOs
Somali Patriotic Movement – Gabio	Mohammad Siad Hersi MORGAN	Clan base (Ogaden) Reputation as a Somali General Geographic region (Kismaayo) Alliance with Aideed
Somali National Front	Ahmed Warsame Mohammad HASHI	Clan base (Isaaq) Isolated geographic region (Northwest Somalia)

Legend

NGO nongovernmental organization UN United Nations

Figure B-16. Center of Gravity Analysis

d. Determine Adversary/Relevant Actor Courses of Action

(1) Potential Courses of Action. Having accomplished the COG analysis as depicted in Figure B-16, JTF J-2 personnel conducted a strategic analysis of potential adversary/relevant actor COAs as depicted in Figure B-17. The JTF did not view the terrain or climate of Somalia to be prohibitive to accomplishing the mission, owing to the extensive experience gained by US and Allied forces during exercises and operations conducted in the southwestern US and Middle East, respectively. However, JTF J-2 personnel determined that the social/political climate in Somalia was fractured and that well-armed groups within the Somali society could potentially cause friction.

Adversary/Relevant Actor Potential Courses of Action				
	COA 1 Militia Factions Acquiesce	COA 2 Some Militia Factions Oppose	COA 3 Widespread Civil War Erupts	COA 4 International Islamic Violent Extremism Intervenes
Implication	Least dangerous COA for US/UN.	US/UN forces must increase peace enforcement activities. Violence, casualties increase.	Mission devolves into peace enforcement. NGO organizations withdraw. UN/US efforts directed towards separating warring factions.	Increased force protection measures draw resources away from aid distribution. Violence, casualties increase.
Adversary/ Relevant Actor Objective	Maintain control of factions/clans/ militias. Wait out international community.	Continuing unstable humanitarian situation benefits one or more factions. Wealth, political power increased.	Gain the most wealth/power from instability. Emerge the dominant faction in Somalia.	Terrorist organization forces US/UN withdrawal garnering a propaganda coup. Possibility of establishing an Islamic state.
Threat to US/UN Mission	Passive resistance to UN aid distribution. Low-level banditry/ corruption increases time and cost of operation.	Localized small-scale engagements directed at US/UN troops and UN aid workers to influence a rapid departure from Somalia.	Expanded peace enforcement mission results in heightened casualties and prompts UN member nations to withdraw support.	Bombings, assassinations increase civilian and military casualties. Some NGOs depart. May prompt reevaluation of mission by UN member nations.
Probability/ Consequence	Low/ Low	High/ Medium	Medium/ High	Medium/ High

Legend

COA course of action	UN United Nations
NGO nongovernmental organization	US United States

Figure B-17. Adversary/Relevant Actor Potential Courses of Action

Additionally, the JTF RESTORE HOPE J-2 anticipated that the nascent Islamic violent extremist movement in Somalia could oppose the US/UN presence. Although considered small in numbers, the violent extremist movement in Somalia had a large population of disaffected young, unemployed Somalis from which they could recruit and radicalize in opposition to Western IGOs.

(2) **COA Development.** Each COA is developed in as much detail as time permits. As an aid to detecting which potential COA one or more factions may take, analysts formulate indicators they would expect to encounter that would objectively point to one COA or another. This analysis may be depicted in situation templates (geospatial and/or systems) for each potential COA. For illustrative purposes, the analysis of each COA is depicted in the following series of systems situation templates (see Figures B-18 through B-21), which show the postulated future link changes that would indicate each COA's possible adoption by an adversary or other relevant actor.

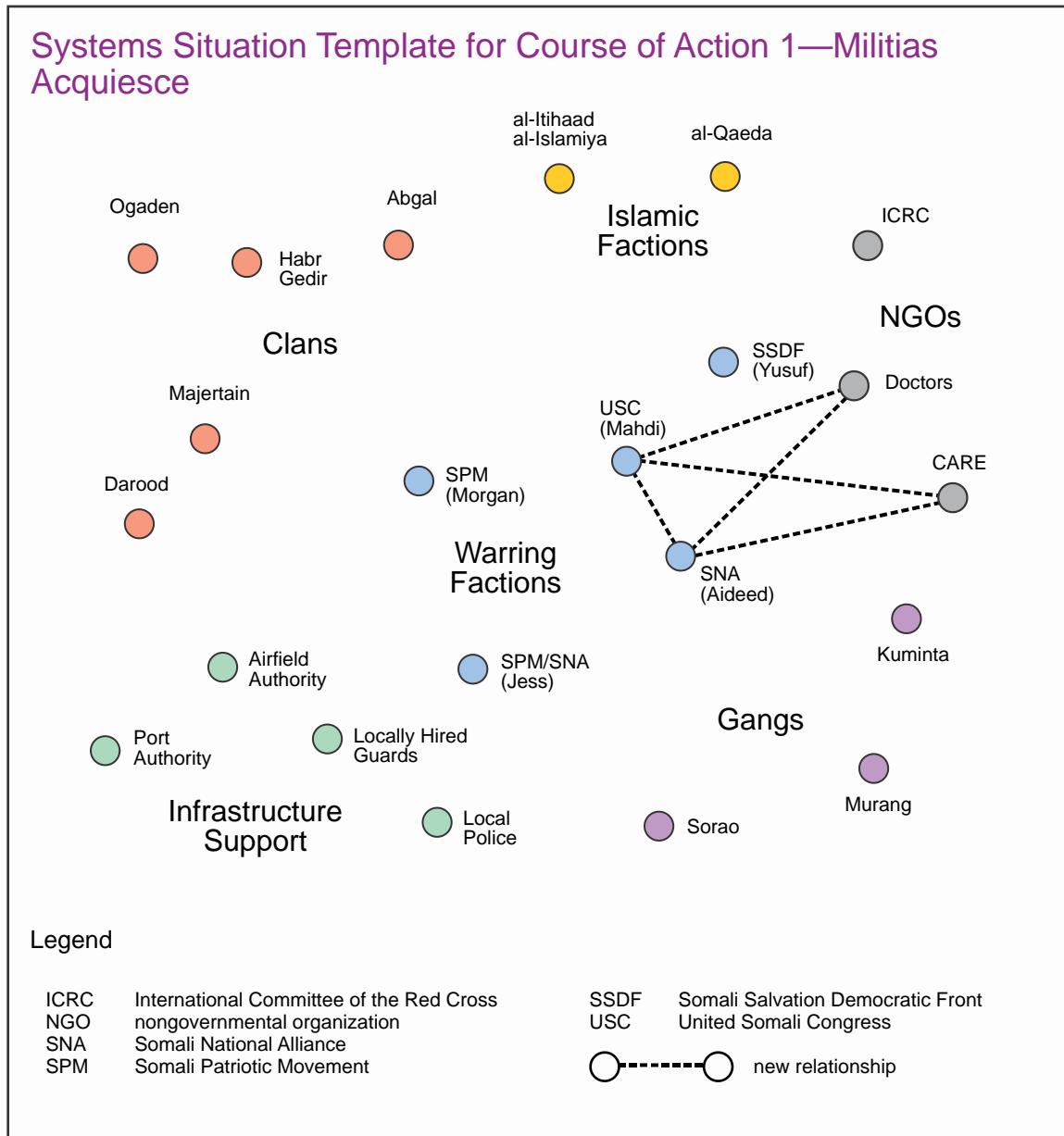
(3) **Identification of Collection Requirements.** An event template (either geospatial or systems) is developed by comparing the analyses depicted on the situation templates for each adversary COA. The purpose of this comparison is to identify those NAI that are unique to the adoption of a specific COA and that may form the basis for collection requirements. For illustrative purposes, a systems event template is depicted in Figure B-22 to illustrate the consolidation of the four systems situation templates indicated above. Each postulated future link may be designated as a NAI and is summarized in the event matrix depicted in Figure B-23.

3. Aideed Chooses to Challenge United Nations Forces

a. **Mission Shift.** Despite some setbacks and incidents, Operation RESTORE HOPE succeeded in its goal of bringing an end to mass starvation. The heavily armed UNITAF units quickly established security in their sectors, and an uneasy truce kept the peace between the factions. By April 1993 the situation had stabilized enough that the US administration determined that it was time to turn the mission over to the UN entirely. On 4 May 1993, operations in Somalia transitioned from the US-led UNITAF to UNOSOM II, which was hindered by a much reduced force structure and an expanded mission. Whereas UNOSOM I (Operation RESTORE HOPE) focused on foreign humanitarian assistance and reducing violence, the mission of UNOSOM II (Operation CONTINUE HOPE) was expanded to include nation building and set the stage for direct confrontation with the warring factions.

b. **Indications of Aideed's Decision to Confront UNOSOM II.** For several months prior to the turnover of command from UNITAF to UNOSOM II, intelligence analysts detected indications that Aideed's militia would militarily challenge the weakened UN forces.

(1) **Systems Network Analysis.** In the first half of 1993, JTF analysts detected changes in the normal interactions among system nodes as depicted in Figure B-24. Among the primary factions existent in southern Somalia, information from numerous sources indicated increased contact between Aideed's SNA faction and the two dominant



**Figure B-18. Systems Situation Template for Course of Action 1—
Militias Acquiesce**

political/military factions in the Kismaayo/Jilib area south of Mogadishu. At the same time, indications were received that Aideed had formed a new alliance with criminal elements in Mogadishu and requested they infiltrate local police and locally hired guards operating at the port of Mogadishu and Mogadishu airport. These deviations from the norm represented initial indications of a change in normalcy by the SNA, one of the primary actors, of a decision to pursue COA 2 (active conflict with UN forces).

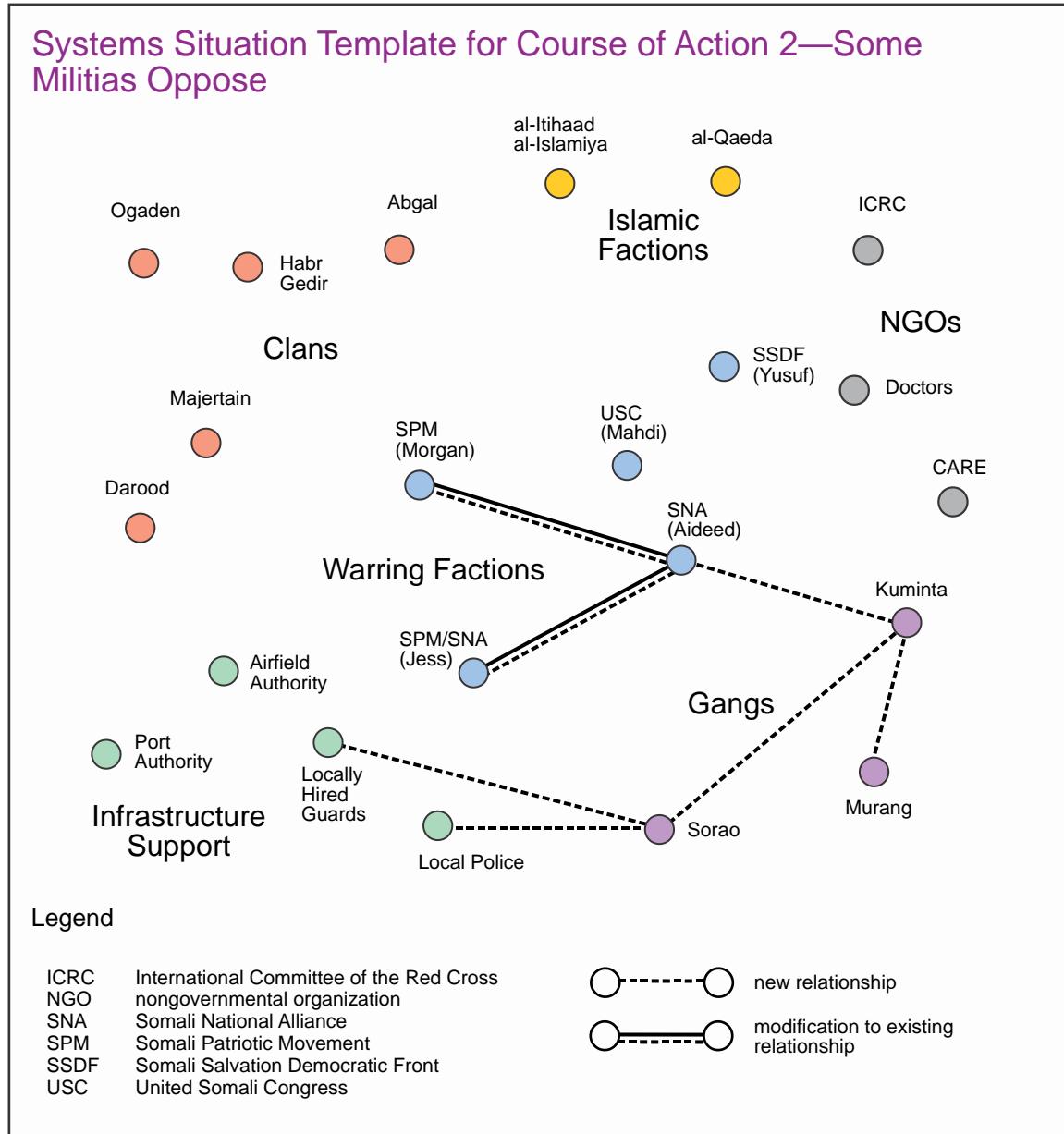


Figure B-19. Systems Situation Template for Course of Action 2—Some Militias Oppose

(2) **Additional Indications of COA 2.** During the first three weeks of April 1993, Aideed traveled extensively to Sudan, Yemen, Uganda, and Kenya reportedly to garner personal political support, arms, and money. He also spent time in central Somalia gathering up new fighters and previously stockpiled weapons that had been sent out of Mogadishu during the UNITAF occupation. Starting in May, Radio Mogadishu, controlled by Aideed, began an anti-UNOSOM II hate campaign that lambasted UN and US forces as aggressors intent on colonizing Somalia and called on Somalis to resist foreign domination. Concurrent with this increase in propaganda came reports from

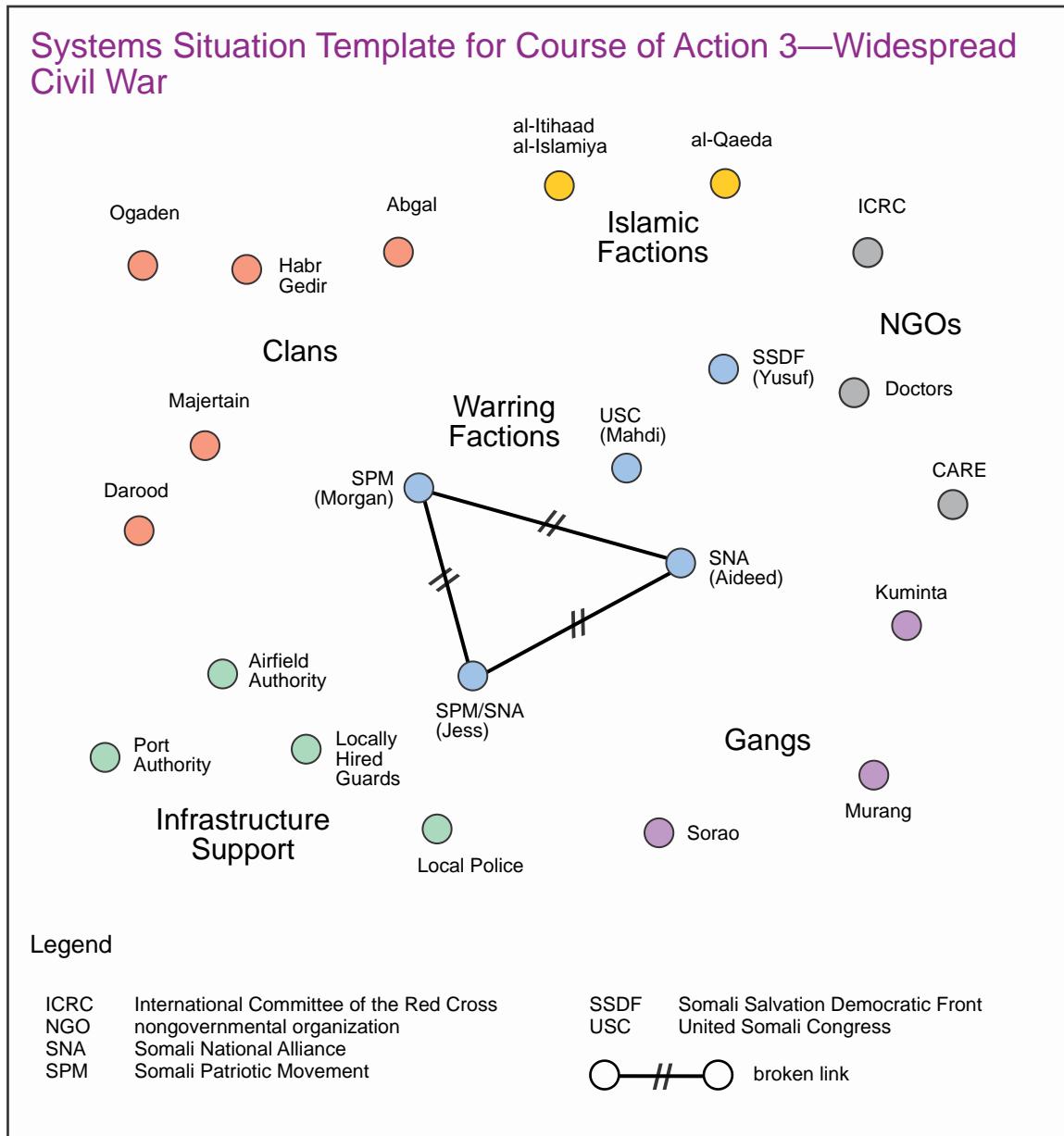
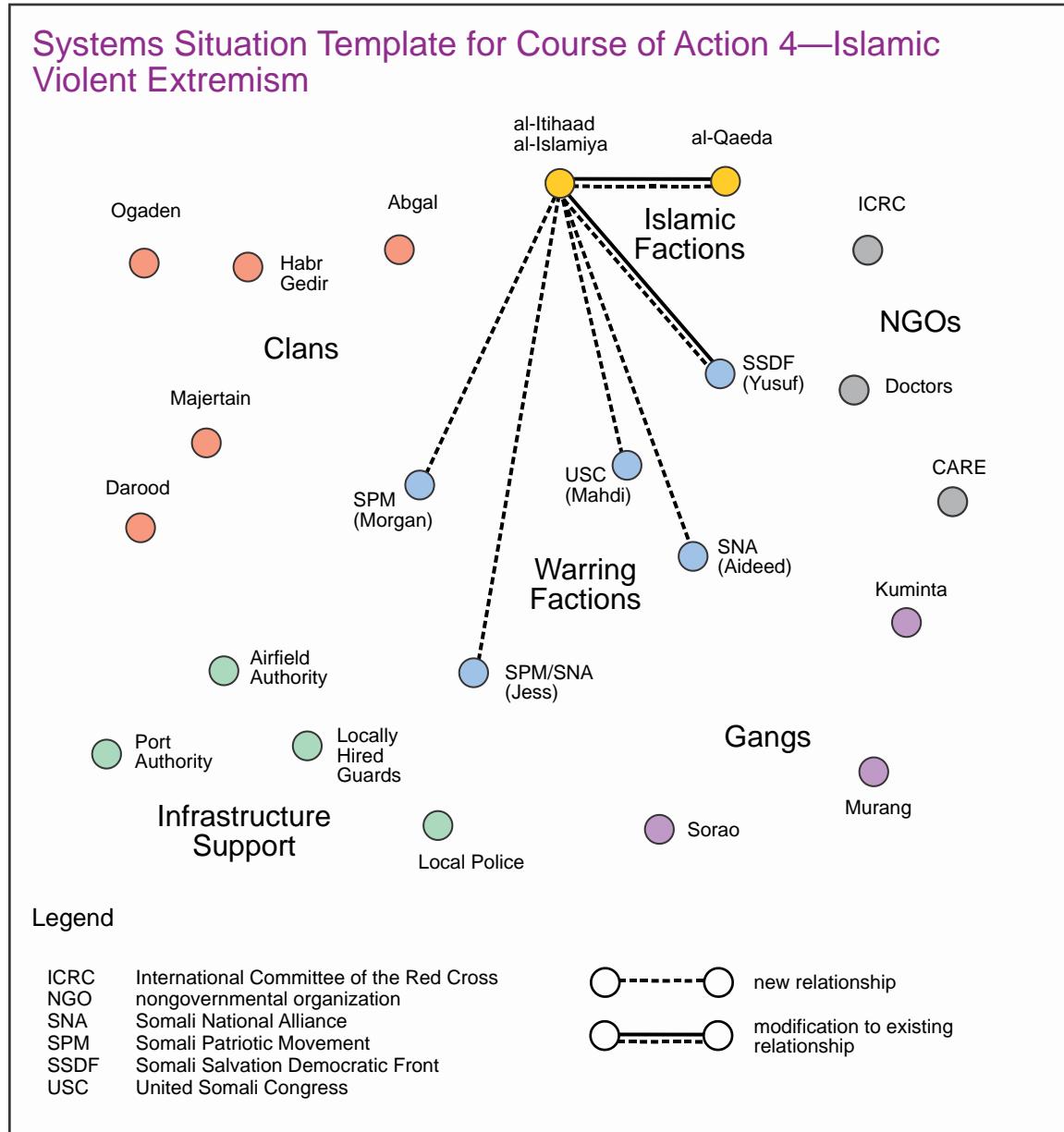


Figure B-20. Systems Situation Template for Course of Action 3—Widespread Civil War

HUMINT and imagery intelligence sources that Aideed's authorized weapons storage sites in Mogadishu were becoming active. Most ominous, during the night of 6-7 May 1993, a UNOSOM II Belgian unit in Kismaayo came under coordinated attack by SPM/SNA militia controlled by Omar Jess, an Aideed ally.



**Figure B-21. Systems Situation Template for Course of Action 4—
Islamic Violent Extremism**

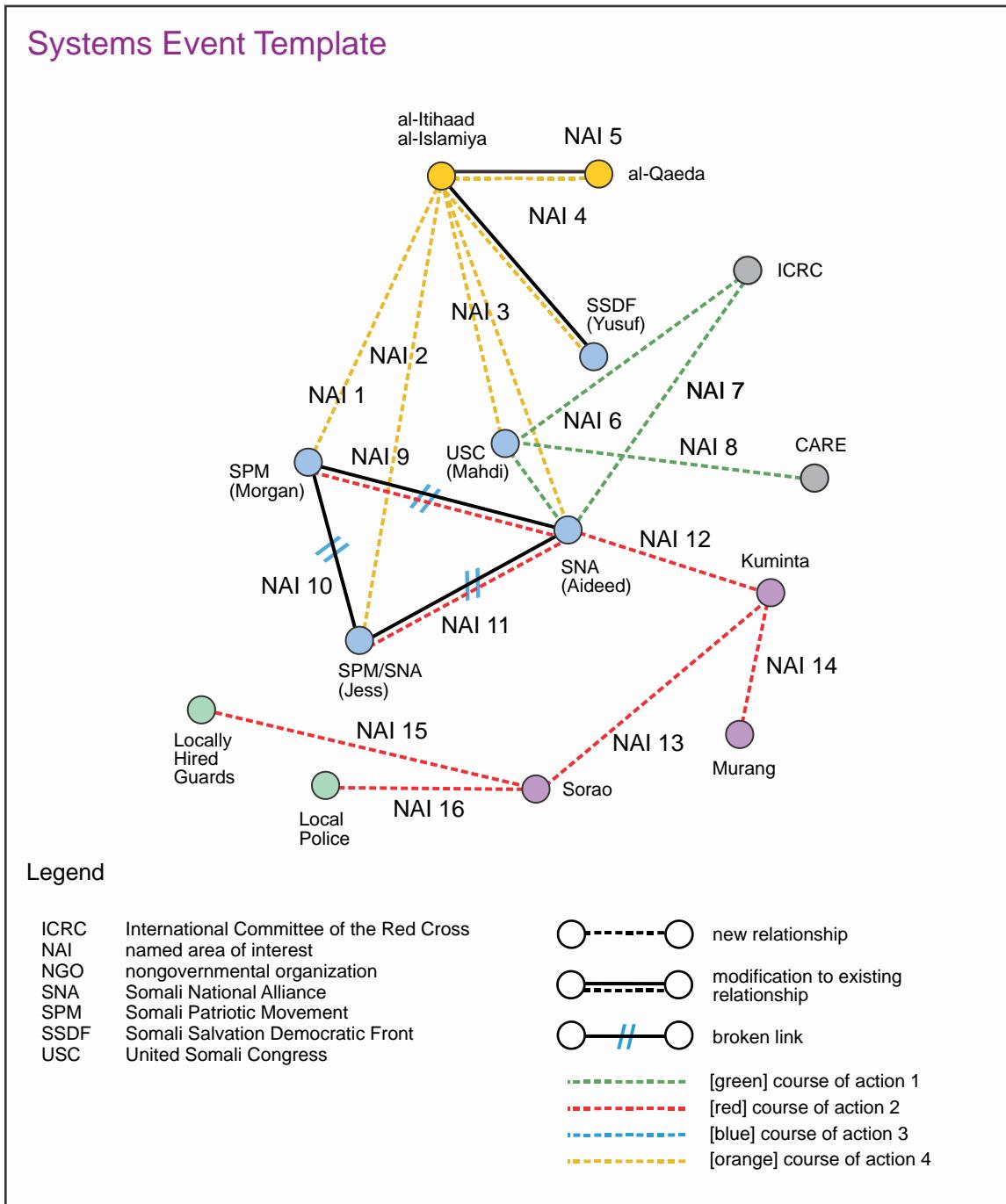


Figure B-22. Systems Event Template

	COA 1	COA 2	COA 3	COA 4
Increased contact with UN/NGOs	++	-	-	-
Decreased participation in UN Forums	-	++	+	-
Forming new alliances within and among militia factions		+	+	-
Increased influence over local police and locally hired guard forces		+	-	-
Increased influence over airfield/port authority workforce		++	+	-
Increased ties and evidence of collaboration with criminal gangs	-	+	++	+

Legend

COA	course of action	++	strong positive indicator
NGO	nongovernmental organization	+	positive indicator
UN	United Nations	-	negative indicator

Figure B-23. Event Matrix

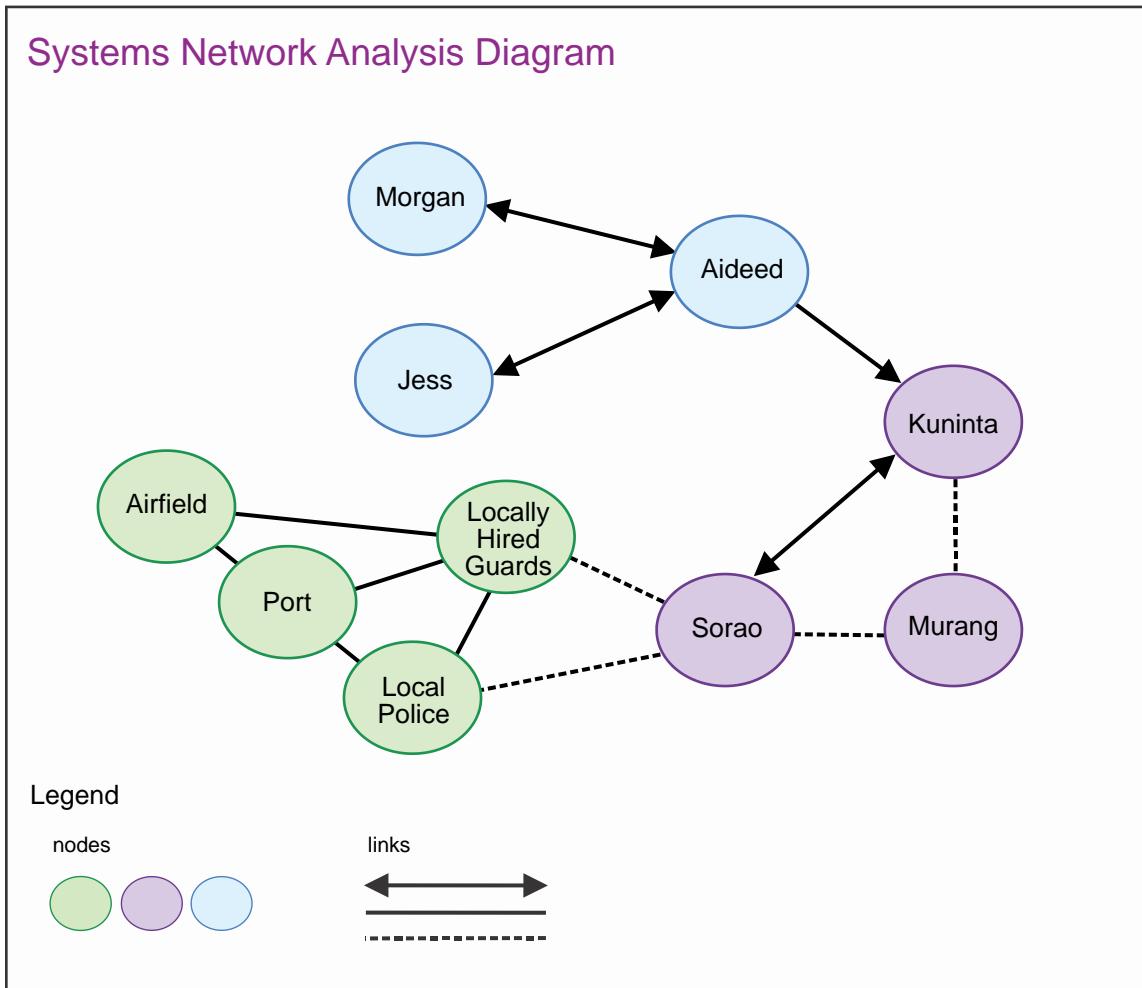


Figure B-24. Systems Network Analysis Diagram

c. **Open Conflict.** Reports that weapons and technicals at Aideed's authorized weapons storage sites had been moved by the end of May caused considerable concern within UNOSOM II. In reaction, UNOSOM II forces declared their intention to conduct a concurrent inspection of all the storage sites of both Aideed and Ali Mahdi on 5 June 1993. A Pakistani brigade was assigned the task of inspecting Aideed's five sites, two of which were collocated with the Radio Mogadishu facility. Although Aideed's guards at each site cooperated with the UN inspectors, hostile crowds began to form around the radio station. As the Pakistani forces concluded the inspections and began to redeploy to their barracks they came under automatic weapons and antitank fire from Aideed's militia. By using a series of well-planned ambushes throughout the day, coupled with the use of women and children as shields, the militia killed 24 Pakistanis and wounded over 75 other UN soldiers. This attack began an all-out struggle between UNOSOM II and Aideed that culminated in the "Black Hawk Down" incident and the ultimate withdrawal of US forces from Somalia.

4. Lessons Learned

The result of this effort not only characterized the operating environment in Somalia at the time, but incorporated information from a wide variety of sources to determine the most probable COA by existing militia factions. Throughout Operation RESTORE HOPE this information enabled UNITAF to maintain the peace by successfully anticipating potentially hostile adversary actions. Although UNOSOM II expressed surprise at the intensity of the 5 June 1993 attacks, UN forces had ample warning of Aideed's intent to test the military resolve of Operation CONTINUE HOPE. Additionally, the analytic effort may have suffered as a result of the relatively inefficient transfer of responsibilities from UNITAF to UNOSOM II. It should be remembered that the JIPOE process is continuous and requires constant reassessment as the mission and conditions on the ground change.

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APPENDIX C

OPERATION IRAQI FREEDOM—A CASE STUDY IN DETERMINING RELEVANT ACTOR COURSES OF ACTION

1. Background

This case study discusses some of the difficulties encountered by JIPOE analysts charged with identifying relevant actors and determining potential opposition COAs (JIPOE Step 4) during the post-combat phase of Operation IRAQI FREEDOM (OIF). Though planning for the combat phase of OIF began in late November 2001, planning for the post-combat phase (phase IV) did not commence in an organized fashion until 20 January 2003 when President Bush issued a directive to establish the interagency Office of Reconstruction and Humanitarian Assistance (ORHA) under the leadership of DOD. In addition to coordinating the interagency planning effort, DOD was responsible for supporting the provision of assistance during the transition from high-intensity combat to the post-combat period, when the security environment was still uncertain and officials had to deal with the immediate aftermath of the war—a time when it would be difficult for civilian aid agencies, UN agencies, and NGOs to meet immediate humanitarian needs. However, the sustained effort for relief and reconstruction fell outside of DOD’s sphere.

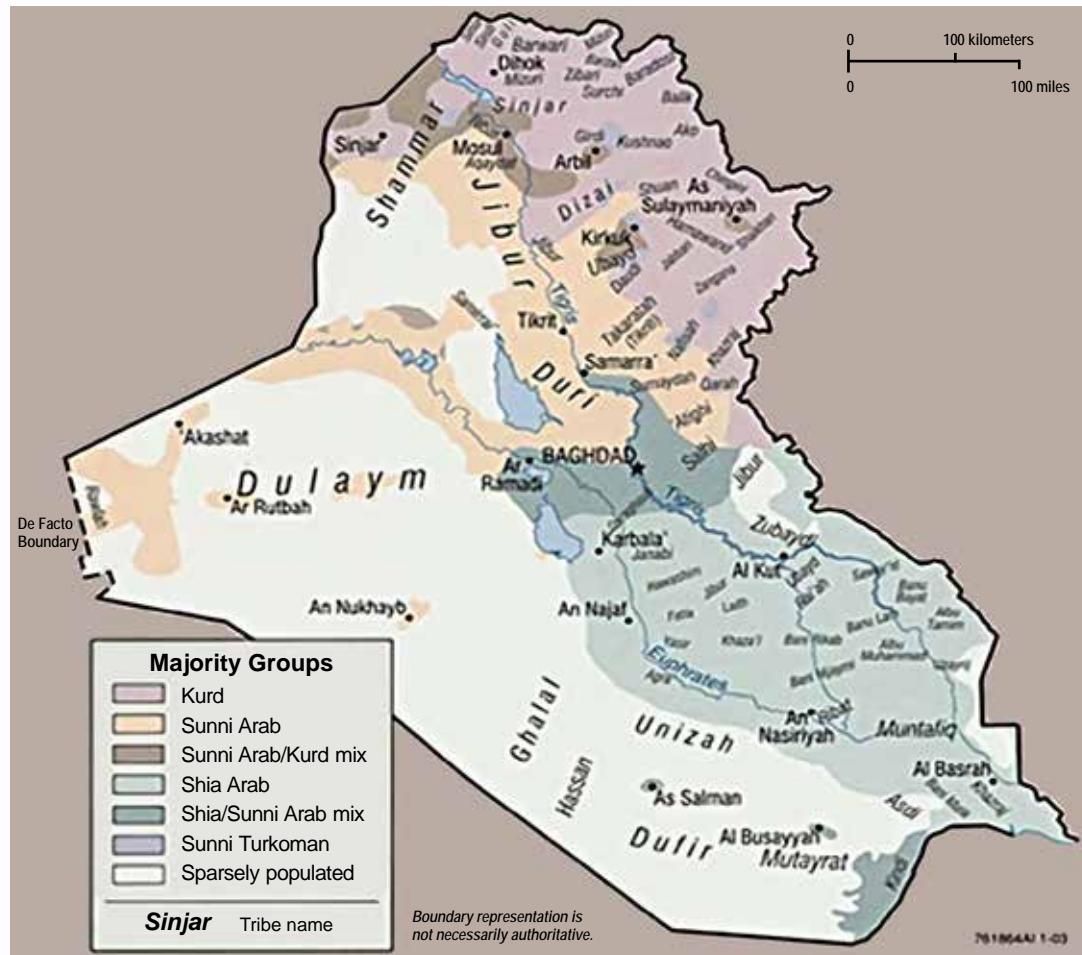
a. **Mission.** DOD’s support mission during phase IV was to support the establishment of a stable Iraqi government, to include establishing a secure environment and assisting in recovery and reconstruction, supporting the establishment of Iraqi self-defense forces, ensuring the territorial integrity of Iraq, and transitioning CMO to international organizations/NGOs.

b. **Identification of Relevant Actors.** Following the end of major combat operations in OIF, the decision making and associated behavior of all relevant actors would ultimately determine the success of stabilization efforts. Therefore, it would be critical for the JIPOE process to identify who the relevant actors were and better understand each actor’s motivations and perspectives. The JIPOE process needed to enable the JFC to predict, appropriately respond to, and influence the decision making and associated behavior of all relevant actors. Only then could the JIPOE process inform a strategy to use lethal and nonlethal means to attain the desired end state of the operation.

2. Intelligence Preparation of the Operational Environment Step Four—Determine Adversary and Other Relevant Actor Courses of Actions

a. **Identify Iraqi Strategy, Desired End State, and Likely Objectives.** In 2002, the 24 million people of Iraq were ethnically, religiously, and politically diverse. In addition, a fractious political scene encompassed both secular and religious groups from within the country as well as the diaspora community. The diversity of the Iraqi population made it difficult for ORHA analysts to identify the potential opposition’s likely objectives and desired end state as they varied greatly from one ethnic, religious, or political group to another (see Figure C-1). Preconceptions about what the Iraqi population would do led to the development of a number of assumptions. These

Distribution of Ethnoreligious Groups and Major Tribes



Ethnic Group	Estimated Population	Also Found In	Religion	Language
Arabs	16 to 20 million	Throughout North Africa and the Middle East, Iran	65-80 percent Shia, 20-30 percent Sunni, less than 5 percent Christian	Arabic (Iraqi dialect)
Kurds	3.6 to 4.8 million	Turkey, Iran, Syria, Armenia, Georgia, Azerbaijan	Mostly Sunni, Shia, and Yazidi minority	Kurdish
Turkomans	300,000 to 800,000	Related to other Turkic peoples in Turkey, Azerbaijan, Iran, and Turkmenistan	Primarily Sunni	South Azeri Turkish
Others	As many as 1 million	Mostly Christians, Iranians, and other groups found in the Middle East	At least 50 percent Christian; Shias, Sunnis, and members of other religions account for the balance	Mostly Arabic; some Persian and other languages

Figure C-1. Distribution of Ethnoreligious Groups and Major Tribes

assumptions included opposition groups will work with the coalition; regional states will not challenge US military operations with conventional forces; the DOS will promote the creation of a broad-based, credible provisional government prior to D-day; and

stabilization would take 2-3 months, and recovery 18-24 months, with the vast majority of US military forces out of Iraq by December 2006. It was also assumed that most of the Iraqi population wanted their situation to improve (or conversely, did not want their situation to deteriorate), and that each ethnic, religious, and political group would try to use the conflict to increase their political power. The desired end state of the Iraqi population was assumed to be a free, independent, and self-sufficient Iraq with a government that expressed the free will of the Iraqi people.

b. Identify the Full Set of Potential Iraqi COAs. By mid-March 2003, ORHA had reviewed the vast majority of interagency plans and estimates as well as developed additional potential opposition COAs as part of the JIPOE process. Once the review and development of potential Iraqi COAs was complete, ORHA narrowed them down based on the five criteria of suitability, feasibility, acceptability, uniqueness, and consistency with potential Iraqi doctrine or patterns of behavior and then settled on the following three possible Iraqi COAs:

(1) **COA 1.** The Iraqi population would embrace US forces as liberating heroes. US forces would be “greeted with flowers” by a grateful Iraqi population after the overthrow of Saddam Hussein’s regime; Iraqi security forces would be trained and deployed to patrol the streets and ensure public order in less than a year and US forces, no longer required, would quickly begin to redeploy out of the country; Iraq’s ex-Ba’athist technocrats would transfer their loyalties to a new administration and Iraq would continue to function more or less as before; and political authority would be handed over to an interim government dominated by pro-US Iraqi exiles.

(2) **COA 2.** The Iraqi population would perceive US occupation as imperial domination by the Judeo-Christian West and be compelled to resist using terrorist tactics. Suspicion of US motives would be acute amongst the Iraqi population; reconstruction would be extremely difficult without the assistance of an international force; ethnic conflict and the widespread presence of private, armed militias would be almost certain; terrorist tactics such as suicide bombings would likely be carried out; the exiled Iraqi opposition would be extremely unpopular in Iraq and would not be welcomed back; members of the Iraqi Army would affiliate with violent elements in the Iraqi population if disbanded; and the longer the US occupation persisted, the more the Iraqis would resort to terrorism to force a US withdrawal.

(3) **COA 3.** The Iraqi population would be indifferent to US occupation. Iraqis, Shiites in particular, would not rise to greet the allies as liberators but would rather present an overall attitude of sullen indifference; and violence would generally be sectarian in nature among the Iraqis rather than directed against coalition forces.

c. **Evaluate and Prioritize Each COA.** The effort to evaluate and prioritize each potential opposition COA was greatly influenced by external factors. Inaccurate intelligence reports lent credence to the dubious views of Iraqi émigré groups such as the Iraqi National Congress. Unrealistic assessments failed to predict the magnitude and intensity of the resistance and provided US analysts with false assurances that coalition forces would be embraced as liberating heroes by the Iraqi populace. These reports were

accepted by ORHA analysts who assumed that the transition to the post-combat rehabilitation and reconstruction process would proceed easily with full Iraqi cooperation. For primarily these reasons, COA 1 was determined to be the “most likely” Iraqi reaction and was prioritized in first place. Despite being identified as the “most dangerous” Iraqi reaction, COA 2 was deemed least likely and was prioritized last. Finally, COA 3 was prioritized in second place as analysts expected some violence and civil disorder among Iraqis but did not expect all Iraqis, Shi’ites in particular, to actively oppose the US occupation.

d. Develop Each COA in the Amount of Detail Time Allows. Planning for Phase IV of OIF did not commence until 20 January 2003, just two months before the outbreak of hostilities. The decision by DOD and the Bush Administration to wait so long to begin planning for Phase IV led to serious time constraints on ORHA as they began the JIPOE process. Given the interagency nature of Phase IV planning, all COAs and recommendations had to be vetted among the interagency participants, which also significantly added to the time constraints. Even so, ORHA was able to conduct a rehearsal or wargame of Phase IV to play out the various Iraqi COAs, develop timelines, identify issues, and prepare an implementation plan for the friendly COA.

e. Identify Initial Collection Requirements. In determining initial collection requirements, ORHA reviewed the Iraqi COAs and identified specific activities and the area in which they were expected to occur, which, when observed, would reveal which COA the potential opposition had adopted. Particular areas of focus for initial requirements included collection on: the Shi’ite response to the invasion, whether Iraq’s ex-Ba’athist technocrats shifted allegiance and remained in their posts at the ministries, the amount of sectarian conflict, whether the Iraqis began to resort to insurgency and terrorism to force the coalition out of Iraq and if so, at what speed.

3. Caught Off Guard—What Happened

a. Coalition analysts had envisioned OIF as a multiphase operation, with Phase IV being the mop-up and reconstruction that followed the collapse of Hussein’s regime. Many thought that the Iraqis would greet coalition forces as liberators and that Phase IV would involve a modest and expedient expenditure of resources. Unfortunately, this optimistic view failed to consider the destabilizing impact that the initial operation would have on the relevant actors and what the second- and third-order effects would be. The destruction caused by major combat operations, followed by the decision to disband most elements of the government, had a tremendous impact on the decision-making and associated behavior of many relevant actors. It was not fully understood how different elements of the Iraqi population would react after the situation on the ground deteriorated from the already deplorable conditions in which Hussein had left his country. In the early days of the conflict, the population’s access to physical security, rule of law, governance, essential services, and economic security was almost entirely eliminated in many parts of the country. Under such conditions, many such as those who had lost their positions in the government or security forces, as well as major elements within the Iraqi population who saw their quality of life deteriorating rapidly, felt as if their very existence was being threatened. The coalition reconstruction effort was only resourced for the best-case

scenario. As the situation became more dire and people behaved differently than expected, the coalition's ability to respond appropriately was limited.

b. It was not fully understood how the deteriorating situation on the ground would create new divisions among Iraqis, inflame tensions that were already present, as well as cause past internal Iraqi conflicts to reemerge. Regime adherents disappeared back into the population but retained the means to intimidate it through threat, arson, and murder. The Iraqi national identity was both fragmented and complicated. Profound tensions had long divided Shiites, Sunni Arabs, and Kurds. Instability and the presence of coalition forces within Iraq also reignited historical tensions between Iraqis and Americans, as well as those rooted in a broader perceived conflict between Muslims and the West. Iraqis were overwhelmingly Muslim, mindful of centuries of oppression by foreign powers, and wary of, if not outright hostile to, a sustained US presence. In southern Iraq, the Shiites well remembered their abortive uprising against Hussein following Operation DESERT STORM and the subsequent massacres, which they blamed in part on the US's failure to provide assistance. They were understandably wary of cooperating too soon; Ba'athist diehards would have to be rooted out and an expectation of personal security established before Shiite cooperation could be expected. In central Iraq, Sunni Arabs had received favored treatment from Saddam's regime and therefore the number of his adherents was larger and their grip on the population more profound than in the south. Only the Kurds in the far north had already virtually extinguished the Ba'athists in their midst and enthusiastically welcomed US forces as liberators.

c. The original plans for post-combat Iraq had envisioned a modest reconstruction effort under retired Army Lieutenant General Jay Garner. As the scale and intractable nature of the lawlessness, factional squabbling, and infrastructure collapse became clear, however, the need for a more comprehensive reconstruction effort became clear as well, and more resources were devoted to expand and accelerate the reconstruction effort. Garner was replaced by L. Paul Bremer, and a political decision was made to disband the Iraqi Army and to ban a large proportion of Ba'athists from government employment. The short-term effect of these decisions was to leave large numbers of Iraqi soldiers unemployed and Ba'athists desperate. Many of these Ba'athists had participated in brutally suppressing the Iraqi people and knew what their fate would be if they gave up local levers of power and perceived that they were literally fighting for their lives.

d. In the midst of growing instability, many relevant actors needed to be considered and their potential COAs better understood. For instance, there were multiple adversaries that took several forms. Financially motivated insurgents, militias, and criminal elements sought to shape the political-military environment in their own areas in order to maximize their financial benefit. Other insurgents and militias sought regional or national political outcomes and used a mix of lethal and nonlethal means to control territory and increase their political control. Additional insurgent groups and militias formed and fought in response to the threat of sectarian violence and other security challenges that ensued in the wake of growing instability. Some groups had the benefit of training, funding, and resources from Iran and Syria, so the roles of state adversaries were certainly relevant as well. International violent extremists, typically affiliated with Al Qaeda, also flocked to Iraq, commonly through Syria, as part of the global effort to

Appendix C

fight the West and protect Muslims from what they saw as Western oppression. Non-adversarial actors within the Iraqi populace were also critical to understand, since the instability left them vulnerable to joining one or several of the adversary organizations. Former members of the Iraqi government, the religious leaders and the tribal leaders were all important to understand as well, as they had the ability to influence elements of the Iraqi population in different ways. Violence in the country took several forms. It often proved more akin to terrorism tactics than to guerrilla warfare, but even acts of terrorism tended to have political objectives. Foreign Islamic extremists flowed into the country to join the fight and targeted Iraqi civilians as well as coalition forces, both to reinforce a sense of insecurity and to promote trouble between ethnic groups. Horrific suicide bombings of Shi'ite pilgrims and Kurdish well-wishers on respective religious holidays were cases in point. Although US forces captured Saddam Hussein on 14 December 2003, it took until 31 December 2011—more than five years longer than originally estimated—for the Iraqi situation to stabilize sufficiently to permit the complete withdrawal of US forces.

e. In the initial aftermath of major combat operations in Iraq, the coalition experienced different versions of all three expected COAs among different elements of the Iraqi population. Some Iraqis did in fact welcome Americans with open arms. Others behaved badly and participated in destructive behavior such as looting and violence. As instability continued and the quality of life deteriorated, many Iraqis saw it as in their best interest to take various forms of action. Some engaged in theft and various forms of criminality, some felt they had to align with militias along political or sectarian lines. Others felt they needed to fight the West as they perceived the coalition as invaders and occupiers of the country of Iraq. Some were motivated to fight by a feeling that they simply needed to defend themselves from harm or avenge the deaths of those they cared about who died in the conflict. Ultimately, the Iraqi reaction to US occupation was a hybrid of COAs 2 and 3, in which a portion of the Sunni population resisted the occupation via insurgency, and the majority of the Shi'ite population was drawn into sectarian violence against the Sunnis while remaining largely indifferent to US and coalition stabilization efforts. Given the immense focus they placed on COA 1, senior US leaders responsible for pre-war planning admitted that they were caught completely unprepared by the actual Iraqi reaction.

4. Joint Intelligence Preparation of the Operational Environment Lessons Learned

a. JIPOE must seek to identify and understand all relevant actors. When identifying the likely objectives and desired end state of adversaries and other relevant actors, it is particularly important to assess their decision making and behavior as much as possible, especially in relation to the desired end state of the operation. An in-depth understanding of the potential opposition's sociocultural characteristics, including the local politics, beliefs, traditions, and religion can help with this. Better understanding the dynamic quality of life factors and the relevant interwoven PMESII systems of the OE is also useful. When planning for phase IV of OIF, a number of false assumptions were made about how the relevant actors would react to coalition activity. This directly affected COA development for all relevant actors and led to what was actually the least-likely Iraqi COA being identified as the most likely.

b. JIPOE doctrine cautions analysts that the potential opposition may deviate from previously observed practices and that the JIPOE analyst should try to anticipate such changes. This is particularly true when the potential opposition is not homogenous or well-understood. Intelligence personnel supporting OIF planning reported that the phase IV analysis was one of the weakest and least-developed aspects of the military intelligence estimates. When identifying potential opposition COAs during phase IV, analysts drew on Iraq's post-DESERT STORM uprising for clues about the possible OE. The 1991 uprisings had a strong sectarian component to them. The Kurdish population in the north and the Shi'ite communities in the south rebelled against the regime, which had a fundamentally Sunni and tribal-based identity. Particularly in the south, the uprising was characterized by bloody retribution against the regime and a general decline in social order, including looting and destruction. While the full collapse of the regime was expected to trigger a similar wave of sectarian violence and lawlessness, few expected that the massive instability in the wake of coalition major combat operations would create the conditions for large-scale insurgency and widespread sectarian violence to develop quickly and on the scale that it did.

c. When evaluating and prioritizing potential actors' COAs, it is important to remember that actions associated with a friendly COA may cause other actors to react by changing to a different COA. Therefore, analysts must continuously analyze how developments in the OE impact the decision-making and associated behavior of other relevant actors. The interagency process and primacy of civilian organizations in administering post-combat Iraq made it difficult to foresee the social complications that would result from those civilian agencies' policies. Policies such as the de-Ba'athification effort and the dissolution of the Iraqi army played a role in creating and sustaining insurgent movements which could not have been anticipated during the planning period. However, analysts should have reprioritized potential opposition COAs once those policies were implemented, if not when they were being formulated. This also highlights the importance of interagency coordination and transparency, particularly in a military engagement, security cooperation, and deterrence environment.

d. JIPOE doctrine states that each COA should be developed in the amount of detail that time allows. Unfortunately, the task to prepare for phase IV of OIF was only assigned two months before the start of hostilities. However, DOD had been actively planning for the combat phase for over a year at that point. Knowing that success during phase IV would be critical to maintaining the peace and re-deployment, DOD should have planned earlier for the post-combat environment. By waiting until there was an explicit order to prepare for phase IV under the newly created ORHA, there was only time to prepare for the best-case scenario. Even then, ORHA analysts should have known better than to go into Iraq dependent on a rosy post-combat outcome and should have better prepared for Iraqi COA 2, the worst-case or most dangerous scenario.

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APPENDIX D

ANALYZING AND DEPICTING A SYSTEM

“Any attempt to reform the university without attending to the system of which it is an integral part is like trying to do urban renewal in New York City from the twelfth story up.”

Ivan Illich (1926-2002), Austrian-born US writer

This appendix contains two sections to help analysts think about how to analyze and depict systems in the OE. **Section A** discusses one alternative for how JIPOE analysts can provide a systems “visualization” to support a JFC’s counterdrug operations in a hypothetical narcotics scenario. **Section B** contains six charts that list typical PMESII subsystems.

SECTION A. VISUALIZING SYSTEM RELATIONSHIPS

1. Overview

When the US conducts combat operations, the impact of those operations is rarely confined to a single country. In many cases, there are implications that cross regional PMESII systems and subsystems, and could have global impact as well. Likewise in operations such as counterdrug, combating terrorism, and counterinsurgency, the adversary typically will act in ways and within networks that cross nation-state borders. In fact, these networks can have a significant influence on the traditional, established nation-state and regional systems. For example, a terrorist network can commit terrorist acts in three countries, have a safe haven and base of operations in a fourth country, and receive supplies and other aid from a fifth country.

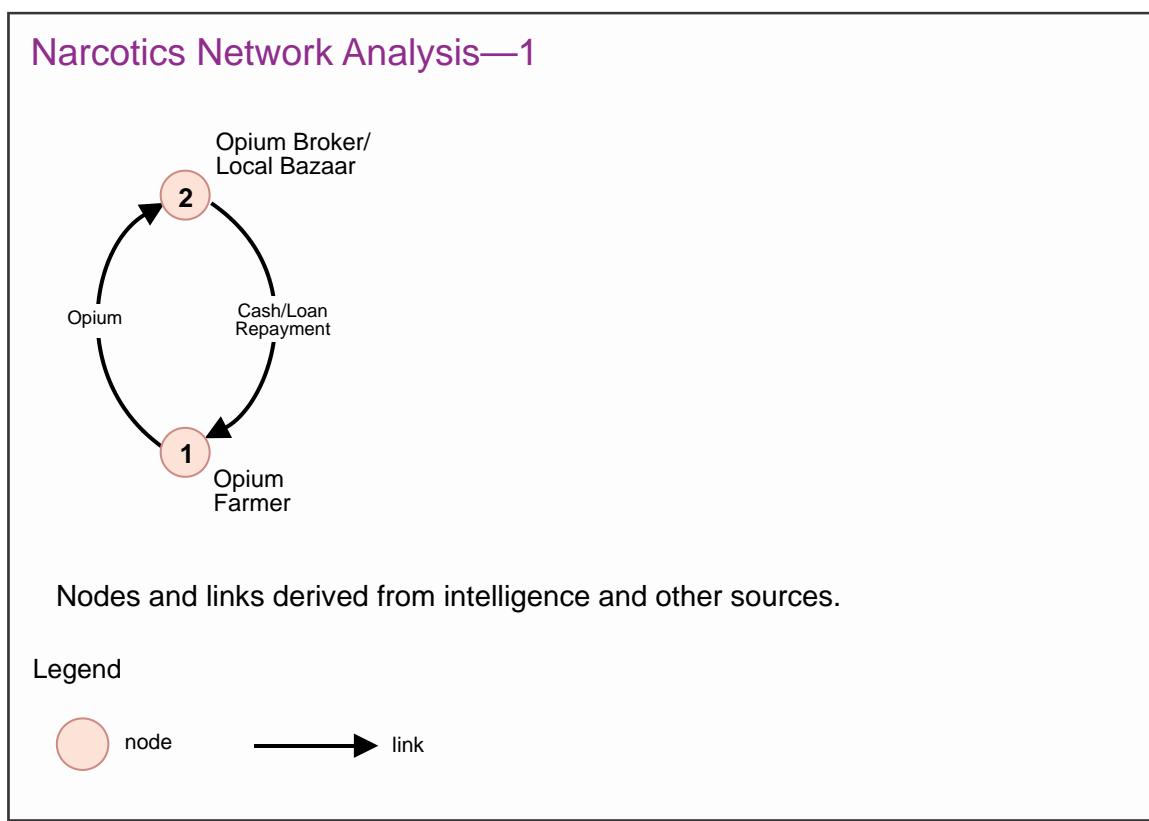
2. Counterdrug Operations Vignette

The following series of figures uses a counterdrug operation vignette to show how analysts can think about nodes, links, and the way a system works in order to identify key nodes and the potential actions against them to create the desired effects relative to the system to support achievement of the objectives. In this vignette, the CCDR has tasked the J-2 to analyze an existing narcotics network and collaborate with the J-5 and interagency representatives to determine how to ensure that a key country’s powerful **insurgent organization does not receive funding from the narcotics trade** (the CCDR’s objective). The J-2 develops an understanding of how the regional narcotics system functions, and then determines the best way to present this to the J-5 and CCDR so they can develop COAs and design a CONOPS. During this process, intelligence analysts use tools such as *association matrices* and *measures of node centrality* described in Chapter III, “Describe the Impact of the Operational Environment—Step 2.” The J-2 presents the results to the commander and staff graphically using a series of *network analysis diagrams* to describe the narcotics network’s operations.

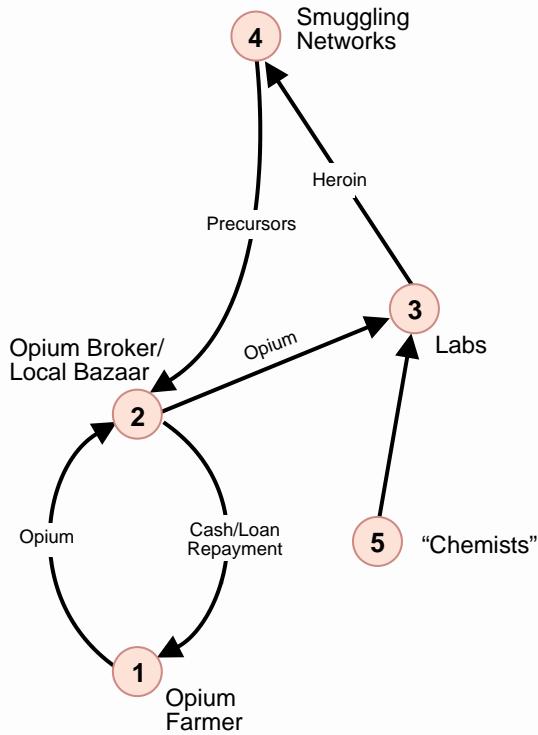
Appendix D

a. In this region of the GCC's area of responsibility, opium is used as a form of microfinance. Often, farmers [1] will take loans, occasionally of goods-in-kind, based on the promise to grow opium and repay the loan with the produced opium. This may allow a farmer to get through a particularly harsh winter or obtain particularly expensive things (car, house, wife, etc.). Socially, there is a clear prohibition against the production of illicit narcotics and almost all farmers recognize and agree with the prohibition. However, most opium farmers simply cannot ignore the economic realities of opium farming. In many cases, the opium broker also will run a legitimate business that also deals in opium in the local bazaar [2]. See Figure D-1.

b. **Figure D-2:** The J-2 knows that the real money-making step in the narcotics system is the conversion of opium to heroin. Opium is valuable as an ingredient of heroin. The opium is converted to heroin in **labs** [3]. The term "lab" means any place the precursors, opium, and chemists are. No sophisticated tools are required. A lab may be a simple hut. Precursor chemicals must be smuggled into country and can be obtained either directly from the **smuggling networks** [4] or often at local **bazaars** [2]. While there are legitimate uses for many precursor chemicals worldwide, none exists in country. "**Chemists**" [5] are the people with the knowledge of how to convert opium into heroin. The J-2 knows that these are not chemists in any Western sense. Many have no idea about chemistry at all, and may even be illiterate. They do, however, know the "recipe" to convert opium to heroin, which is a limited skill in the region.



Narcotics Network Analysis—2



Nodes and links derived from intelligence and other sources.

Legend

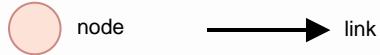


Figure D-2. Narcotics Network Analysis—2

c. **Figure D-3:** There is little narcotics use in country (given the extreme poverty, there would be little profit in that market). Therefore, heroin has to be smuggled to **overseas markets** [6]. **Narco-barons** [7], typically based in country, are key individuals who control vast segments of the country's narcotics trade and have access to massive wealth (probably 100s of millions to billions of US dollars). Many have sizable personal militias. They are the primary profit makers from the sale of narcotics overseas. Their primary means of getting money from the overseas' markets is through **banks** [8] and the use of the **hawala** [9]. Narco-barons may also exert direct control over the smuggling networks [4], certain "chemists" [5], the labs [3], and opium brokers [2]. Additionally,

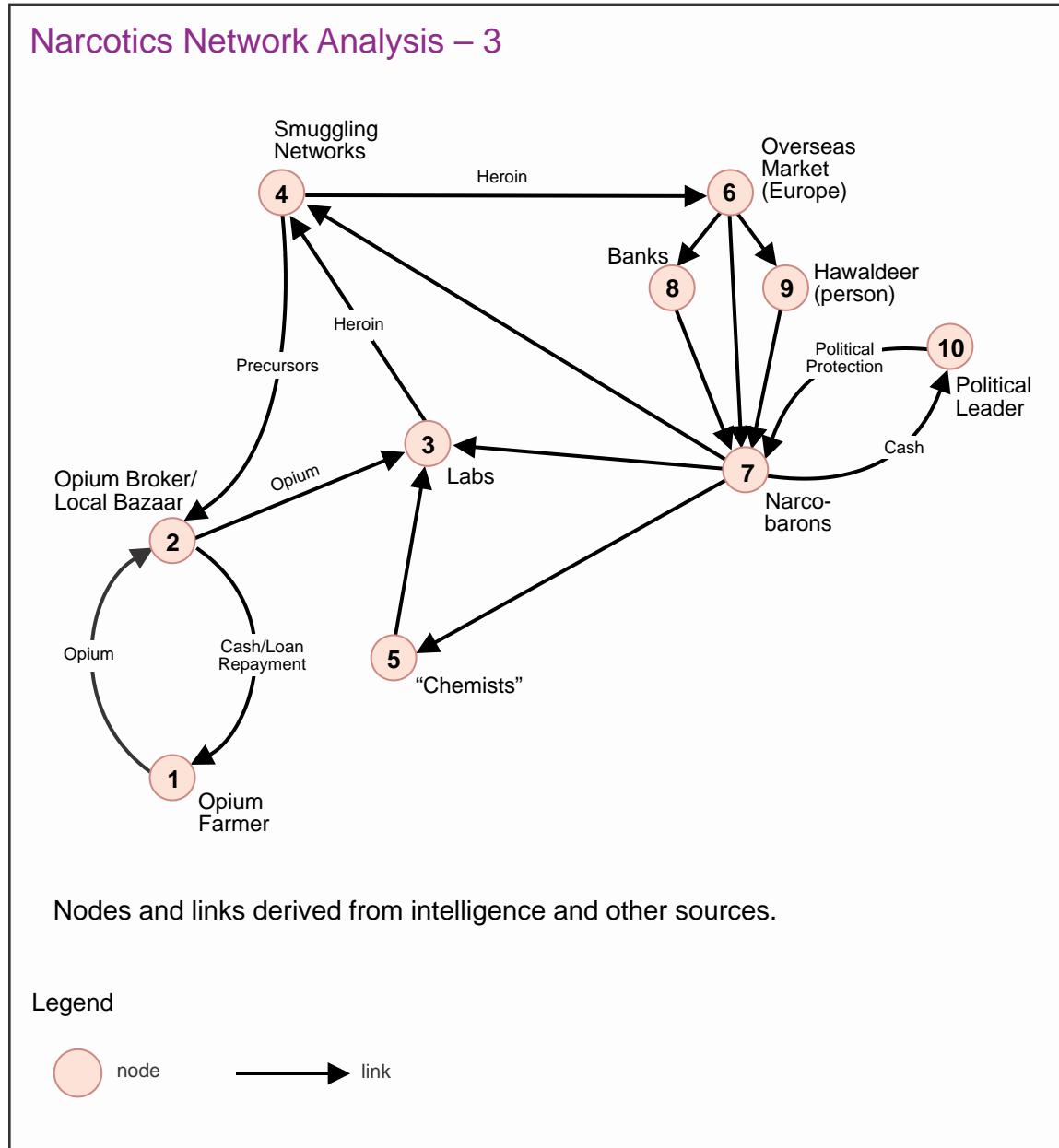


Figure D-3. Narcotics Network Analysis—3

by using their immense wealth narco-barons are often able to obtain political protection from local and national **politicians** [10].

d. **Figure D-4:** Current intelligence supports the conclusion that the insurgents [11] benefit indirectly from the narcotics trade. The insurgents almost certainly obtain funds by “taxing” farmers [1] and opium brokers [2] in areas where they have a strong presence. The insurgents also probably receive sizeable contributions from narco-barons [7]. This may be a form of protection payments, but narco-barons may also seek to perpetuate the lack of enforcement enabled by the continuing instability created by insurgent operations. Also, the same smuggling networks [4] responsible for moving narcotics out of country also are likely responsible for the “backflow” movement of arms and personnel into country, directly benefiting the insurgents.

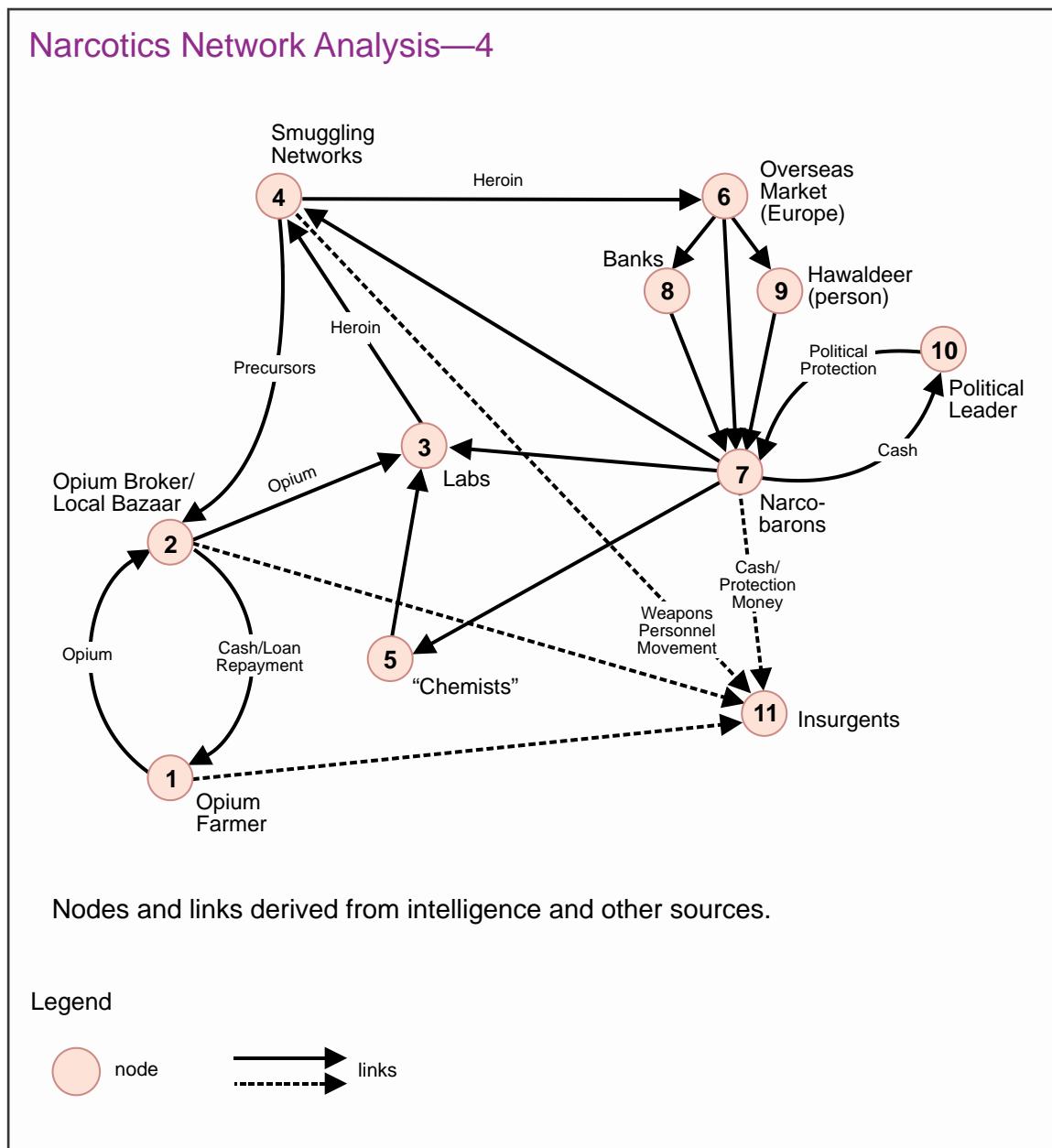


Figure D-4. Narcotics Network Analysis—4

e. As intelligence analysts have been refining their understanding of the narcotics network, they have been considering how best to prevent the insurgent organization from receiving funding from the narcotics trade. Analysts conclude that the nodes and links directly related to the conversion of opium to heroin are important, and that the country's labs and their chemists are key to the entire system. Perhaps opium could be smuggled out of country and the conversion could occur at labs in other countries. But this is much more difficult for the opium brokers, and severely reduces the profitability of narcotics in country. Since the conversion occurs in the labs, attacking them directly could affect the entire system. But these makeshift labs are transient (where the right people and material are present for brief periods), and may be too difficult to identify and interdict.

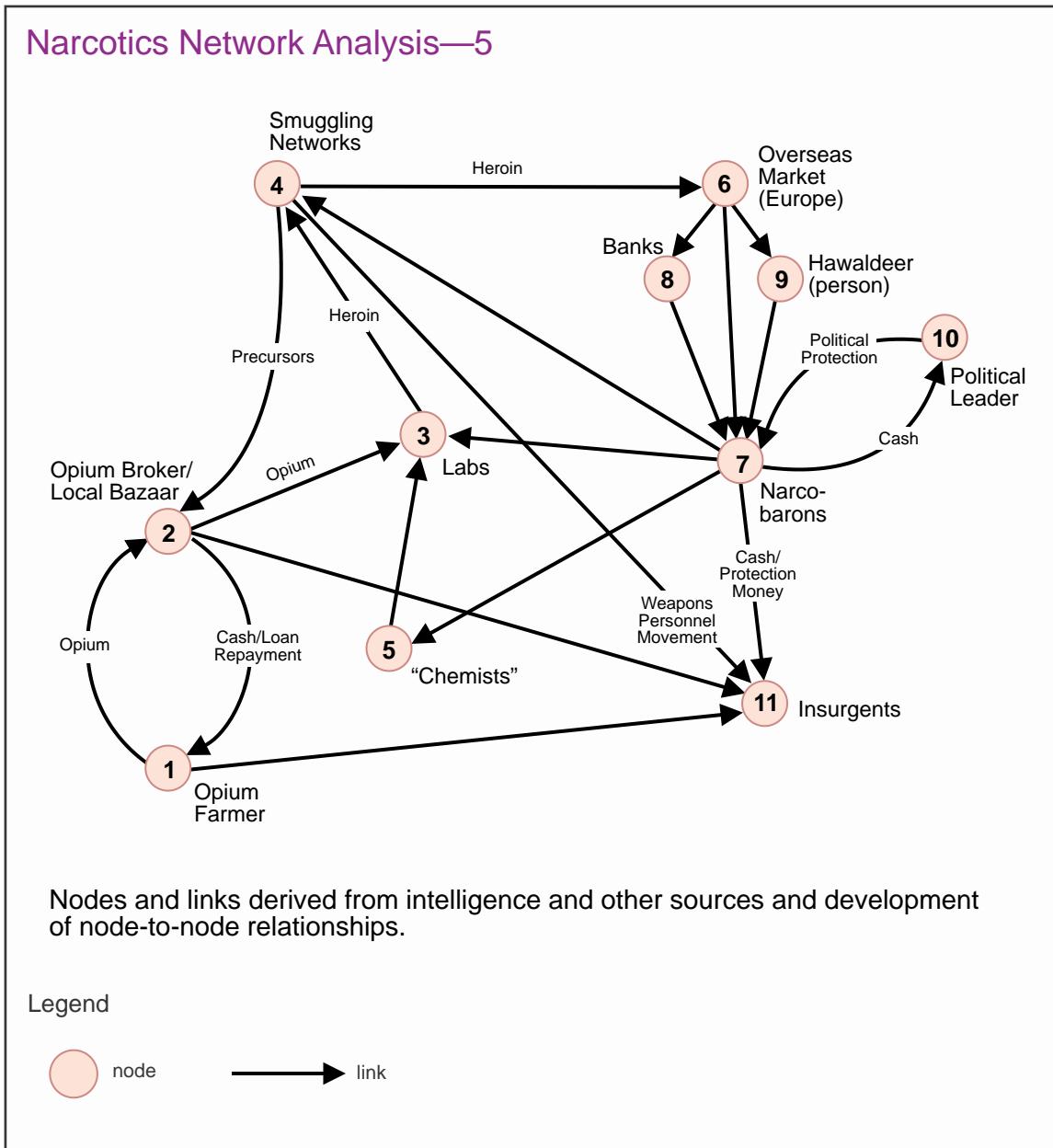
f. **Figure D-5:** How then can the joint force affect the ability of the labs to convert opium to heroin? The J-2 identifies three factors that could limit lab operations. First, the joint force can work with the host country to interdict the supply of opium ([1] and [2]) to the labs. Second, interdicting the precursors ([2] and [4]) is likely to have a significant impact on labs. Third, the knowledge of how to convert opium to heroin is limited to the chemists, so identifying, locating, and confining a sufficient number of chemists [5] should have a huge impact on labs. Success in these three areas should limit heroin production and movement overseas, reduce the amount available in overseas markets, and reduce or eliminate the flow of money to the insurgents from the sale of narcotics. The J-2 also assesses that given the wide-ranging influence the narco-barons [7] exert on the narcotics trade, interdicting them directly also is likely to have a significant impact on the system. Since the labs and the chemists are commonly collocated and vital to the production of heroin, the J-2 designates them as key nodes in the network (see discussion of key nodes in Chapter III, "Describe the Impact of the Operational Environment—Step 2").

g. **Figure D-6:** Collaboration between the J-2, J-5, and other selected staff members has increased as the J-2 develops a more comprehensive understanding of how the narcotics network functions. In particular, the J-5 becomes fully involved at the point of considering potential actions (to include all instruments of national power) that can influence the network to create effects to support achievement of the objectives. The CCMD's JIACG likely will participate in this process. The process will evolve later to development of potential COAs and a CONOPS, but the present focus is on identifying discrete actions against specific nodes in the system. Once the J-2 briefs the participants, this cross-functional group identifies a number of possible actions.

(1) **Diplomatic.** Apply pressure against political leaders [10] to cease their political protection of narco-barons; share information with international banks [9].

(2) **Informational.** Encourage opium farmers [1] to accept alternative means of income to opium production. Synchronize public affairs and MISO and other IRCs to inform farmers about alternatives and to influence their acceptance and implementation of them.

(3) **Military.** Capture and arrest narco-barons [7]; capture chemists [5] and destroy labs [3]; interdict smuggling networks [4] to cut flow of precursors.

**Figure D-5. Narcotics Network Analysis—5**

(4) **Economic.** Freeze narco-barons' assets at international banks [8]; work with host country to provide economic alternatives for opium farmers [1].

h. The J-5 can now develop alternative COAs based on the J-2's systems analysis and an understanding of potential actions against various nodes. Interagency collaboration during COA development is essential in this example, because the feasibility (and thus the validity) of a COA may depend on the agreement and capability of one or more agencies to execute specific tasks. The J-5 also must consider potential undesired effects. For example, the income alternative for opium farmers and brokers

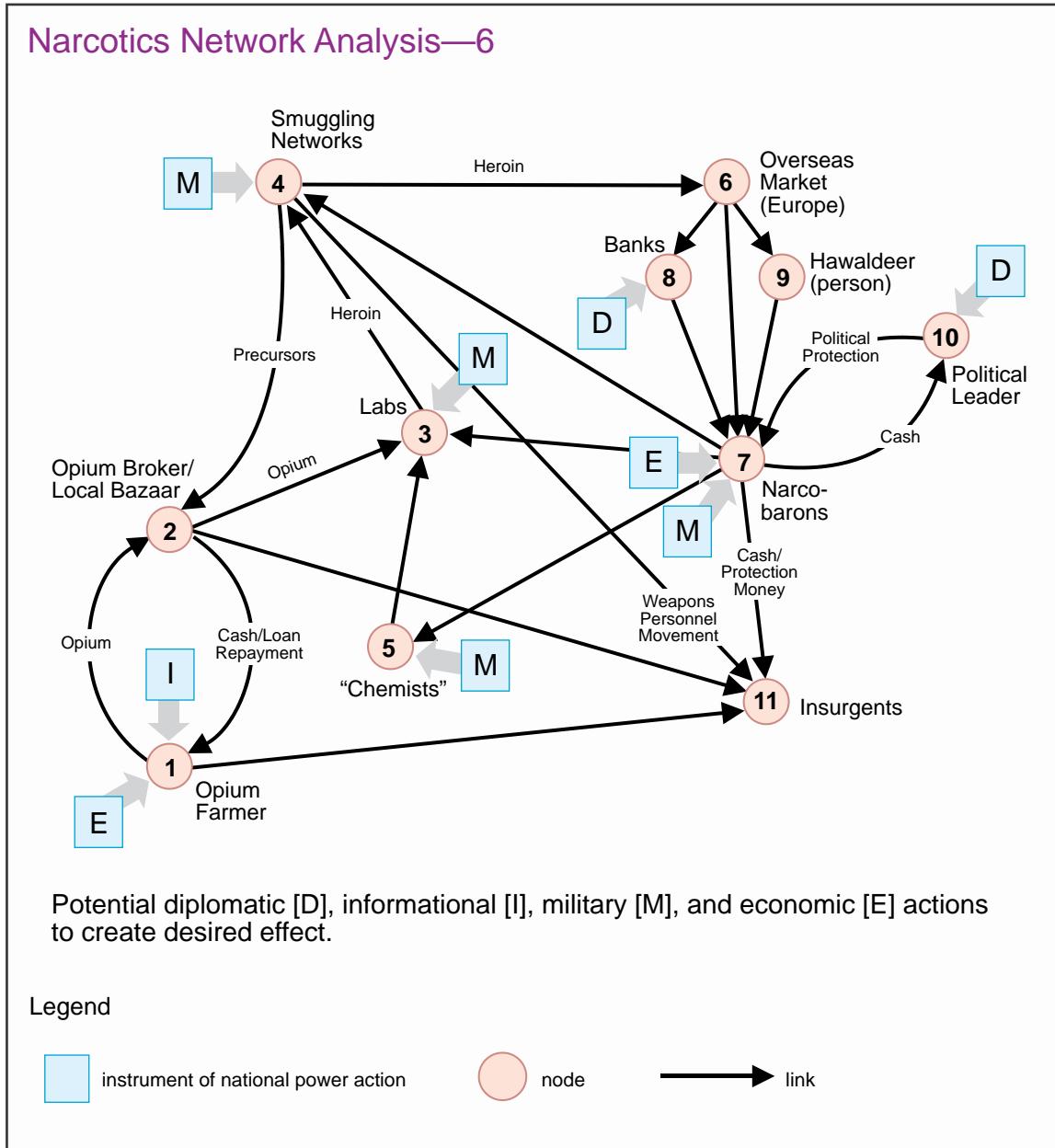


Figure D-6. Narcotics Network Analysis—6

must be achievable, or they will lose operating capital and their livelihood, perhaps turning them against the larger multinational effort.

i. The foregoing is a simple hypothetical example of thinking about how a network functions, determining the key node-link relationships from the perspective of an objective that supports specified desired effects, and identifying potential actions that the joint force can take against nodes in the network to achieve that objective. The actual analysis would be significantly more complex, and would encompass a multitude of nodes and links across PMESII systems and subsystems. Although the J-2 leads this

analysis as part of JIPOE, the effort is cross-functional in nature, with participation from the rest of the joint force staff and various military and other agency representatives based on the JFC's desired effects to contribute the conditions necessary to achieve the commander's objectives. Clearly displaying the relevant networks and their key node-link relationships and interdependencies in a graphical component of the intelligence estimate and other intelligence products can greatly enhance the JFC's and staff's understanding of how the networks function and how they can be affected.

SECTION B. TYPICAL POLITICAL, MILITARY, ECONOMIC, SOCIAL, INFRASTRUCTURE, AND INFORMATION SYSTEMS AND SUBSYSTEMS

Figures D-7 through D-12 in this section depict typical PMESII systems and subsystems. Understanding the composition and interaction of systems relevant to the joint operation at hand will help the JFC and staff determine how best to set the right conditions to achieve objectives and accomplish the mission. The composition of relevant systems will vary from country to country and from operation to operation. As the examples in Section A demonstrate, some systems will be “transnational” rather than purely “nation-state” in nature. Awareness of these variations from operation to operation will help the JFC avoid the creation of undesired effects.

3. The Political System

The political system is comprised of the central and local governments, political organizations (including political parties and interest groups), and regional/international actors who receive and process political system demands (see Figure D-7). Considerations for analysis include:

- a. The predominant political ideology and what and who constitutes its major defining policies.
- b. Sense of national identity to include strengths or weaknesses.
- c. The constitutional basis for government.
- d. Assessment of the quality of governance.
- e. Separation of powers from religion and state.
- f. Degree of centralization of power between the military and state.
- g. Role ethnic and religious groups play in government.
- h. Strength of political influence on the military.
- i. Toleration (or presence of) opposition groups.
- j. Characterization of political relationships with regional neighbors to include points of friction.

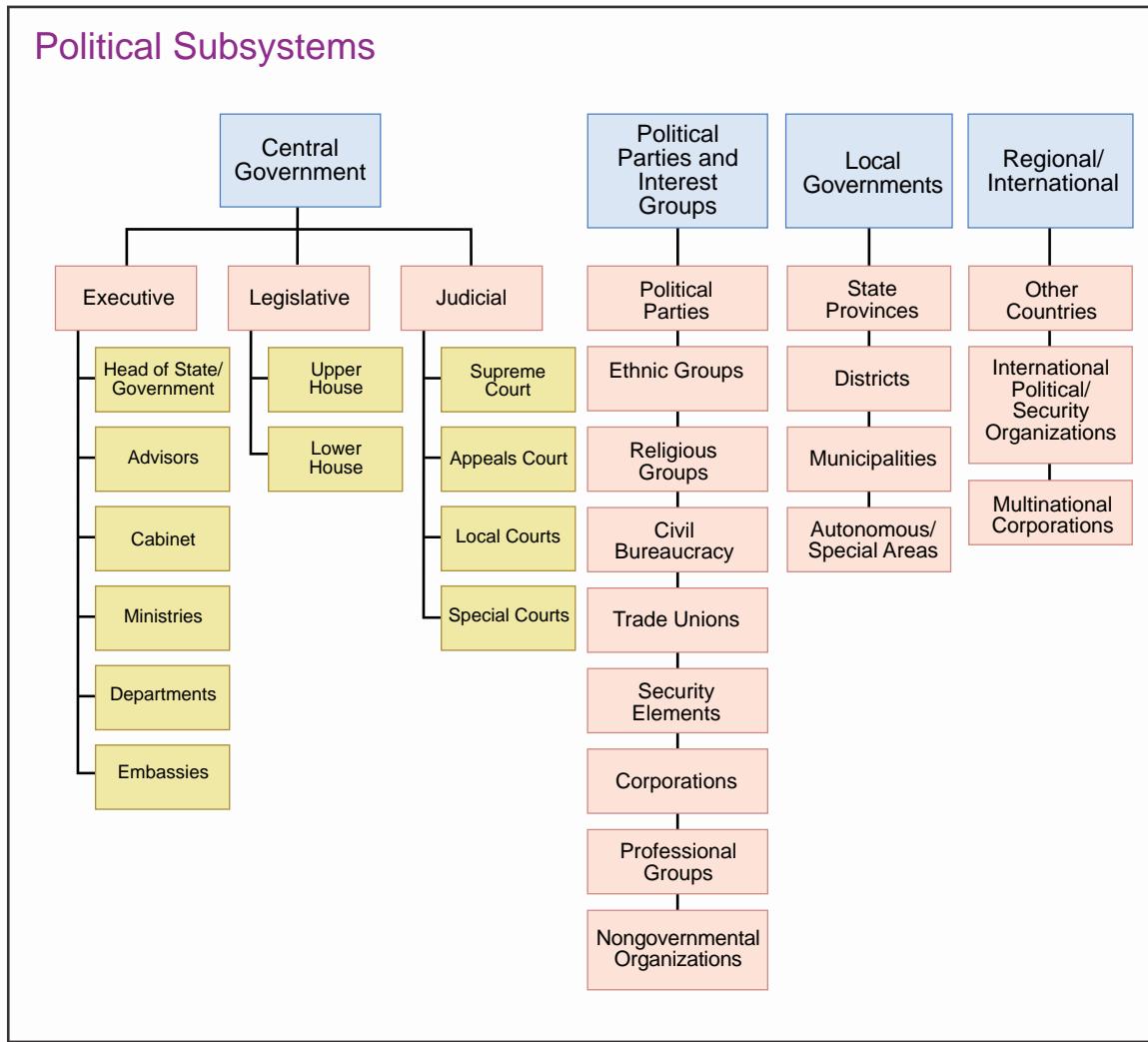
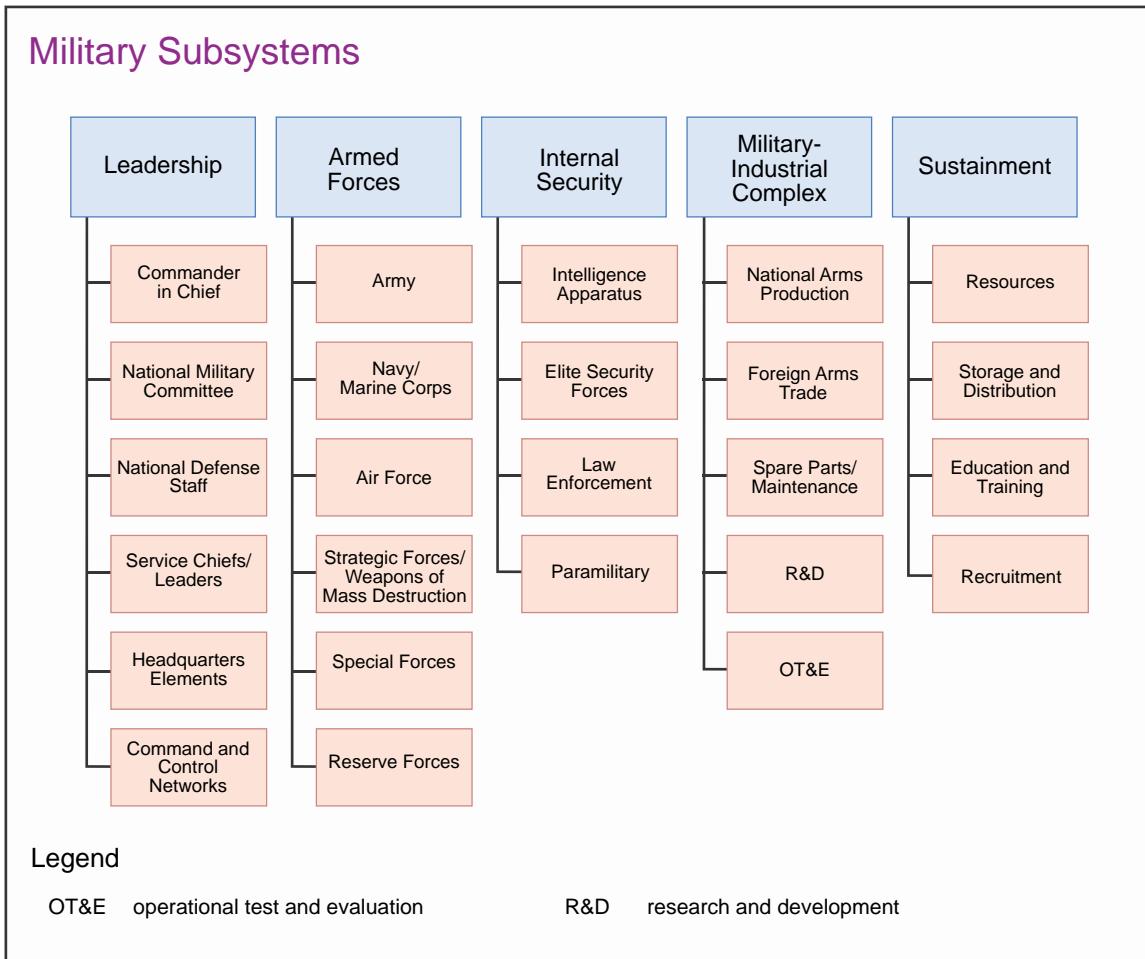


Figure D-7. Political Subsystems

4. The Military System

The analyst examines a military system in regards to national objectives, protection of the government, and that country's population. Components of subsystems (see Figure D-8) are examined in order to identify essential subsystems and assess the value those subsystems provide to the system as a whole. Considerations for analysis include:

- Military role in the development of national strategy.
- Potential and realized threats (external and internal).
- Characterization of military and civilian relationship.
- Role of demographics in military leadership.

**Figure D-8. Military Subsystems**

- e. Factors regarding the development and maintenance of a military.
- f. Influences (positive and negative) affecting combat readiness.

5. The Economic System

The analyst examines an economic system in regards to the sum total of production, distribution, and consumption of all goods and services in a country (see Figure D-9). That sum can be thought of as the combination of the formal and informal economies. Considerations for analysis include:

- a. Type of economic model (capitalism, social, other).
- b. Major industrial engines of the economy (manufacturing textile/apparel, vehicle, or machine tools).
- c. Agriculture base.

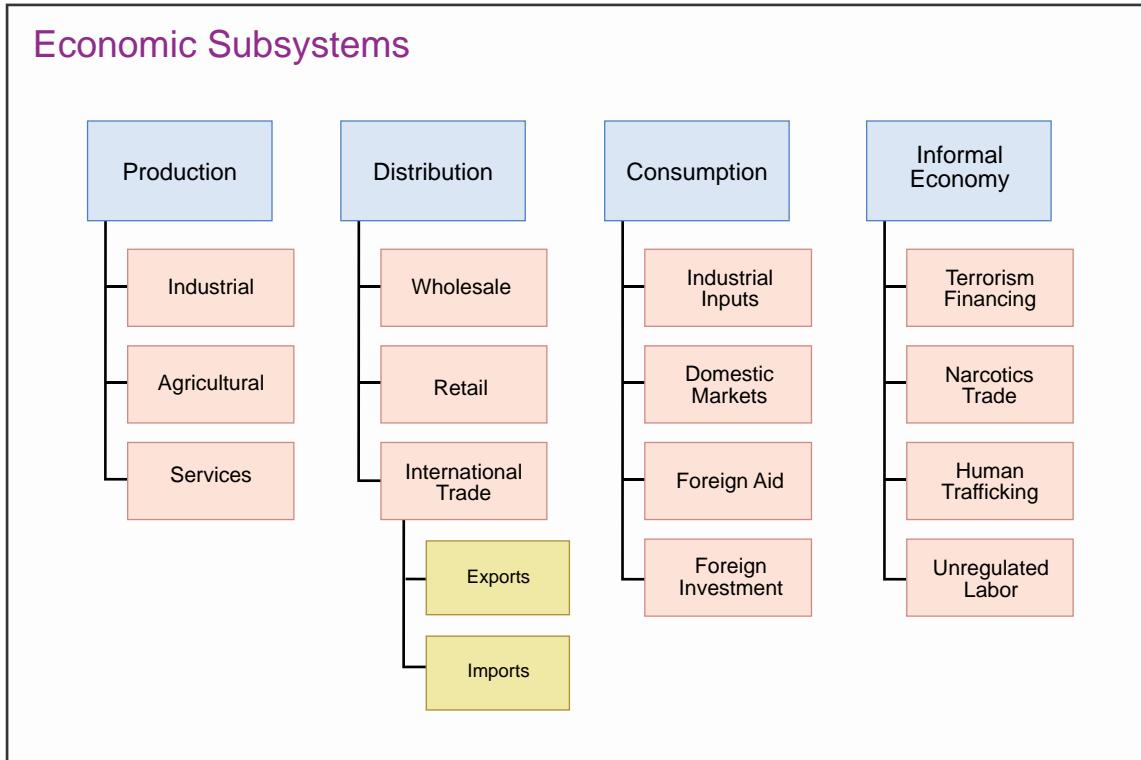
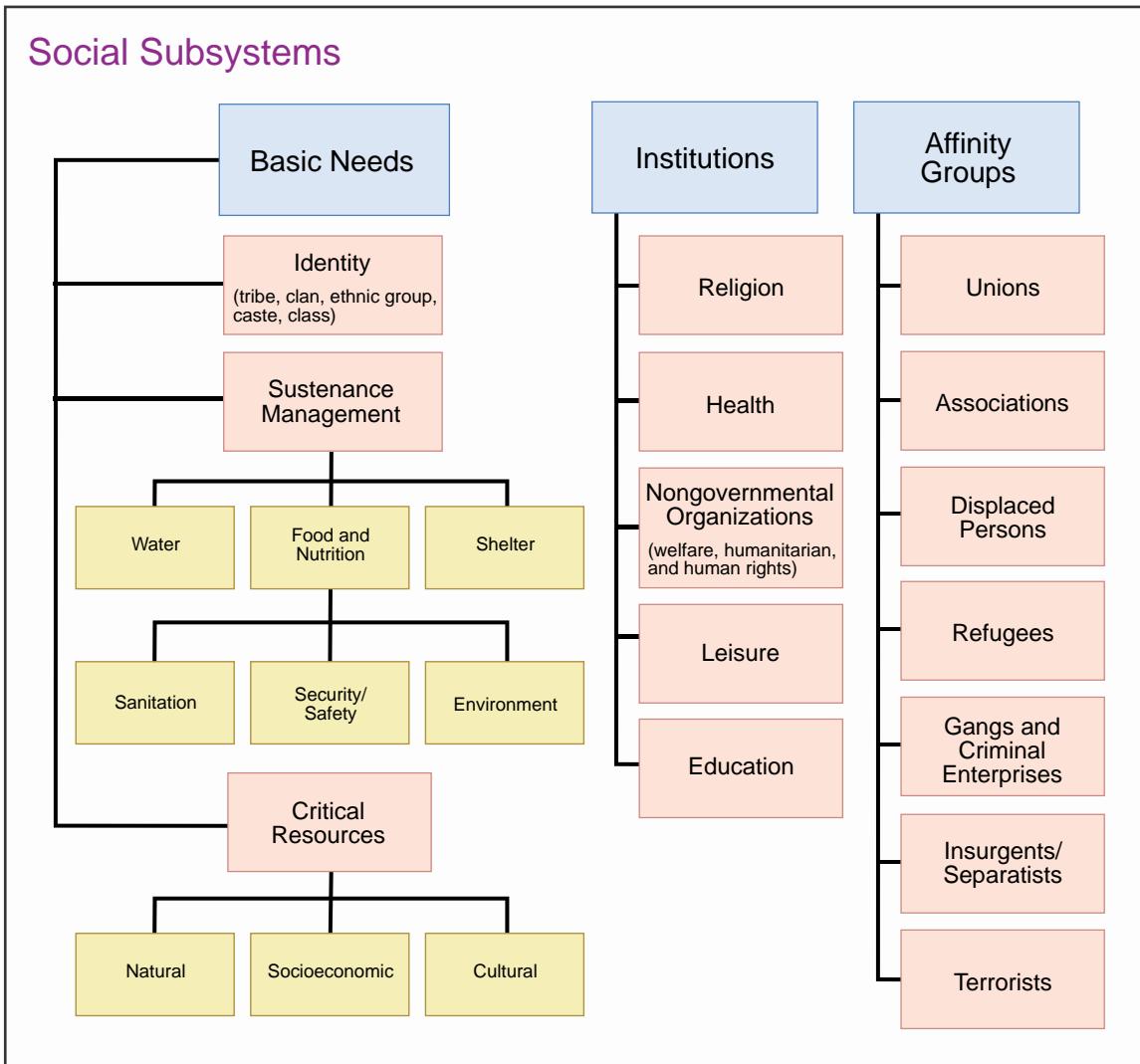


Figure D-9. Economic Subsystems

- d. Economic relationship with other countries and with international trade (imports, exports, and the balance of payments).
- e. Health of domestic markets.
- f. Opportunities available for people to borrow money or own businesses.
- g. Relationship with the country to foreign investors and the international community for foreign aid and debt relief.
- h. Labor force—skilled and fully employed.
- i. Factors regarding the informal economy (terrorist financing, narcotics trade, trafficking in humans, unregulated labor, and smuggling).
- j. Impact of corruption, accountability, and transparency on the economic system.
- k. Sources of economic tension.

6. The Social System

The goal of the analyst is to identify the system's framework (see Figure D-10) in order to evaluate and dissect social interactions. Considerations for analysis include:

**Figure D-10. Social Subsystems**

- Cohesion of socio-religious groups.
- Causes of societal pressures and discontent.
- Impact of immigration and emigration.
- Availability of food and medical supplies.
- Educational and economic opportunities.
- Role of IGOs and NGOs.
- Types and extent of crime.
- Presence and impact of separatist and terrorist groups.

- i. Cultural differences among population.
- j. Tolerance for religious freedom.

7. The Infrastructure System

Primary subsystems of an infrastructure system include: utilities, transportation, industry, and public facilities (see Figure D-11). Research is dedicated to the discovery of relationships, dependencies, and vulnerabilities within and across various infrastructure subsystems. Considerations for analysis include:

- a. Utility network which supports industry and the population.
- b. Sufficiency of water and wastewater facilities.
- c. Adequacy of transportation network.

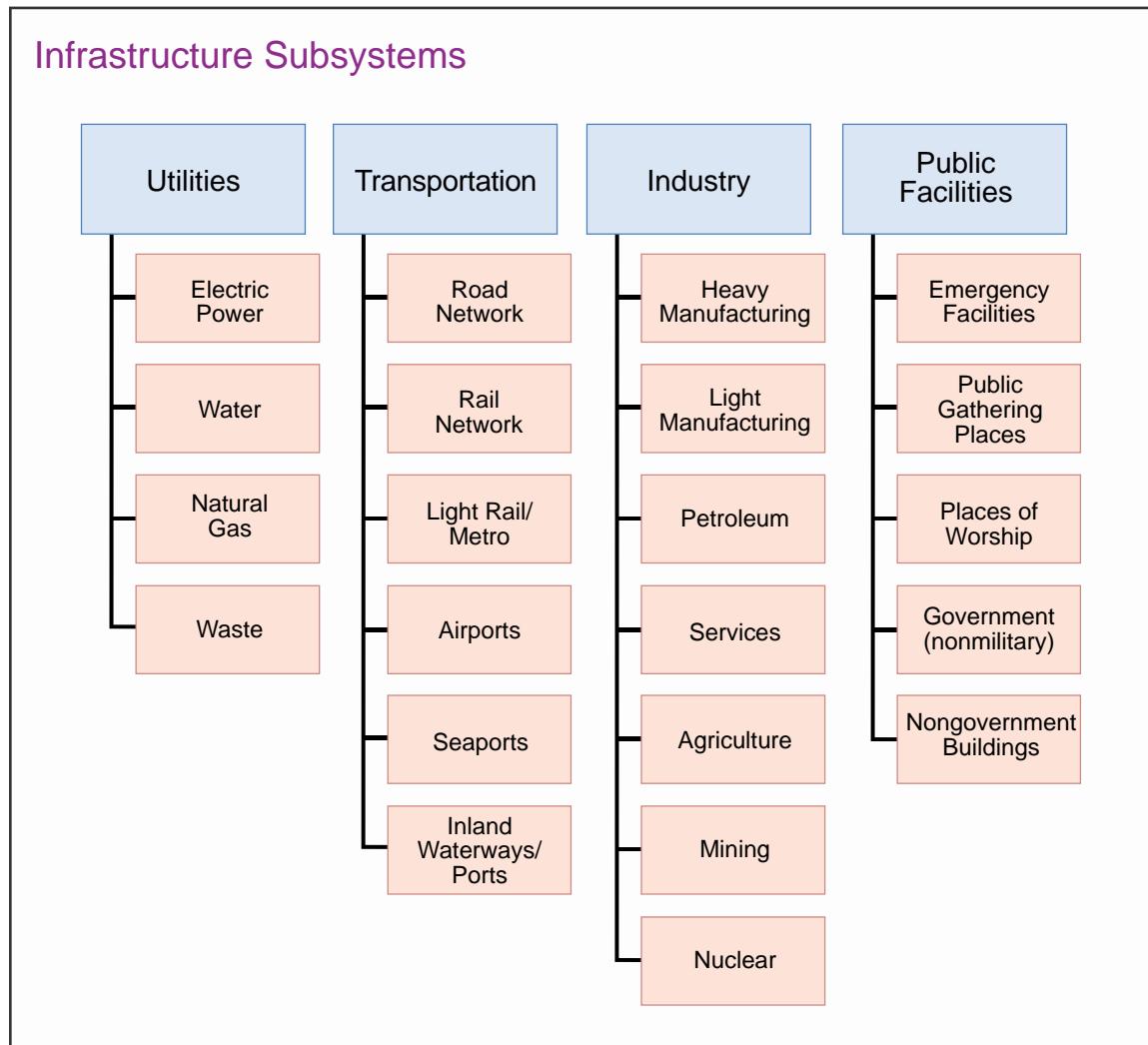


Figure D-11. Infrastructure Subsystems

- d. Contribution of industrial facilities to the economy and national self-sufficiency.
- e. Adequacy of public facilities meeting the needs of the population.

8. The Information System

Research is dedicated to the examination of an information system in regards to national objectives, communication capabilities, and operations in support of a focus area. Primary subsystems include: global information, national information, and defense information networks (see Figure D-12). Essential subsystems must be identified and assessments made as to the relative value essential subsystems provide to the system as a whole. Considerations for analysis include:

- a. Capabilities of national communications systems.
- b. Location of critical communications facilities.

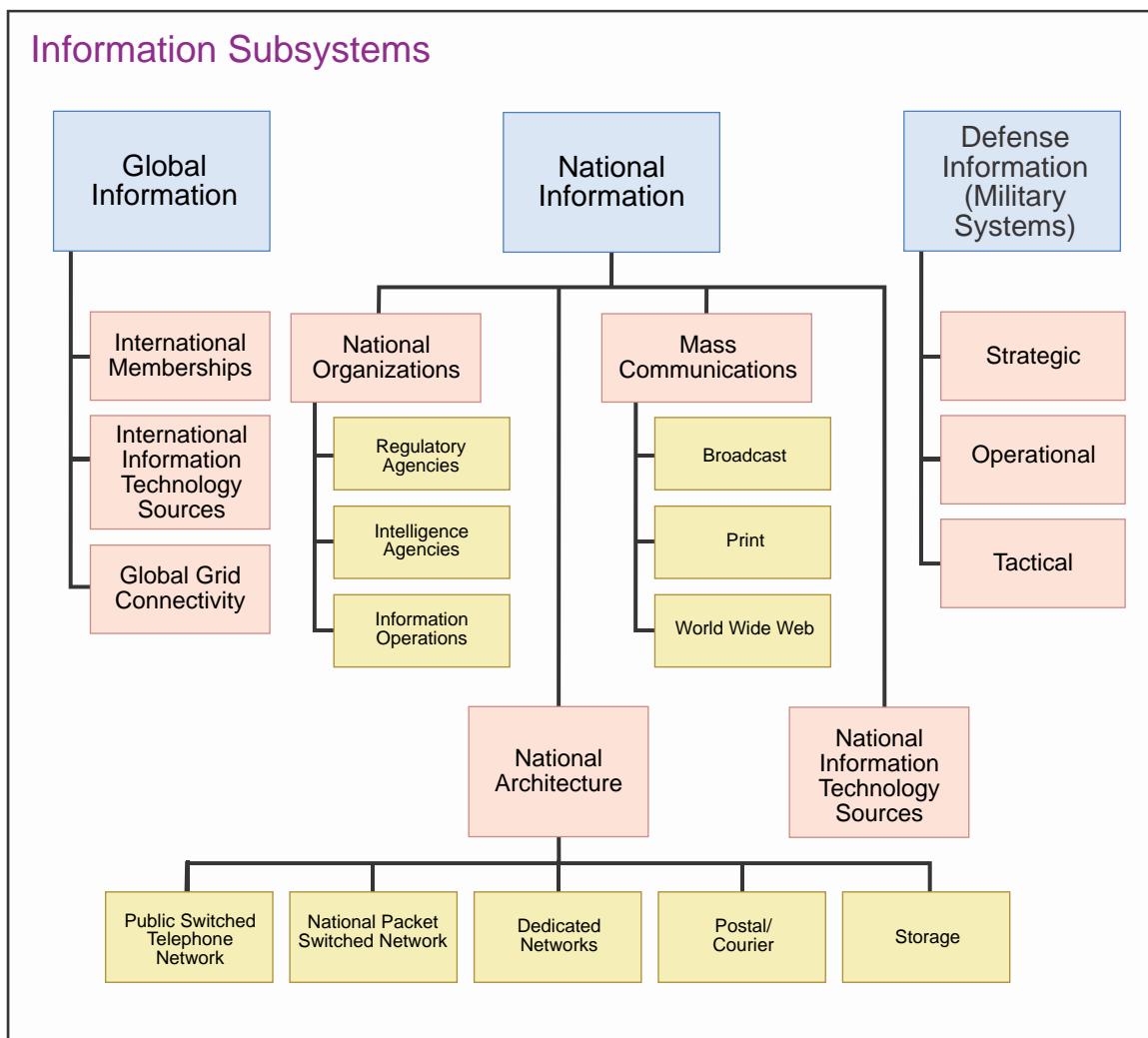


Figure D-12. Information Subsystems

Appendix D

- c. Foreign support to internal telecommunications.
- d. Programs that support national, technical, and academic research.
- e. Assessment of hardware and software technology standards.
- f. Censorship of the media.

APPENDIX E

JOINT INTELLIGENCE PREPARATION OF THE OPERATIONAL ENVIRONMENT SPECIALIZED PRODUCTS

1. Overview

The basic JIPOE process provides a disciplined methodology for analyzing the OE and assessing the impact of that environment on adversary and friendly COAs. The process makes extensive use of graphic displays. Some of these graphics (such as MCOOs, situation templates and matrices, and event templates and matrices) are integral to the four-step process. However, depending on the situation, additional, specialized, graphic displays may be developed to support and provide greater clarity to the JIPOE effort. The following discussion illustrates some common JIPOE specialized products currently in use. Additional products tailored to specific situations may be devised by local JIPOE analysts limited only by their intelligence, imagination, and creativity.

2. Infrastructure Overlay

Infrastructure overlays identify those infrastructure assets of significance to the joint operation and/or the well-being of the civil population. These overlays should identify which assets are key infrastructures and depict their vulnerabilities (see Figure E-1). By

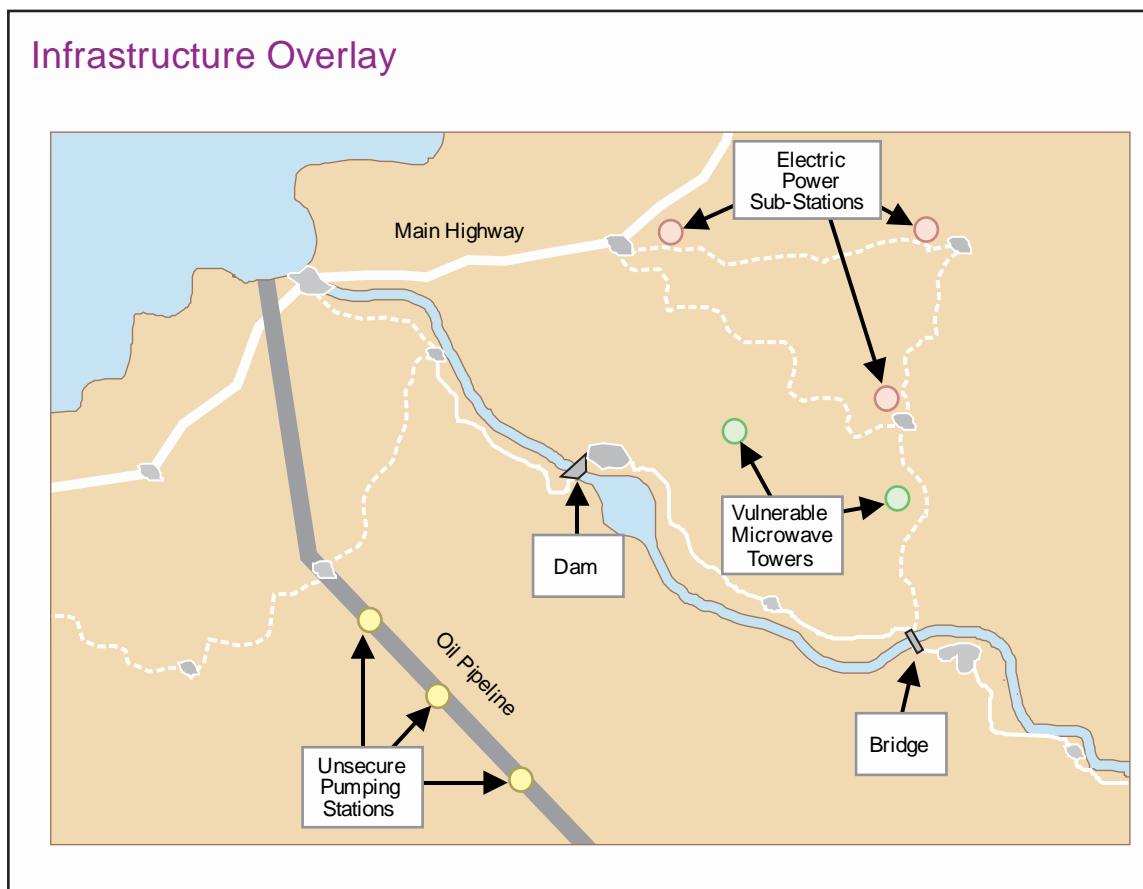


Figure E-1. Infrastructure Overlay

Appendix E

identifying key infrastructure and their vulnerabilities in combination with the known capabilities and intentions of adversaries and other actors, the JFC can employ security countermeasures in an appropriate, cost-effective, and rational manner.

3. Primary and Secondary Route Overlay

Primary and secondary route overlays may be used to assist in transportation planning in a variety of situations (e.g., NEO, WMD interdiction, antismuggling). These overlays identify likely primary and secondary routes based on the characteristics and capabilities of the transportation infrastructure such as bridge classifications, road surface, or rail gage. The analysis should also include associated considerations such as possible ambush sites and the locations of supporting emergency service infrastructure (e.g., police stations, hospitals). Figure E-2 shows an example of a primary and secondary route overlay.

4. Pattern Analysis Plot Sheet

Pattern analysis plot sheets help distinguish patterns in activities associated with particular days, dates, or times that are depicted by the rings and segments in Figure E-3.

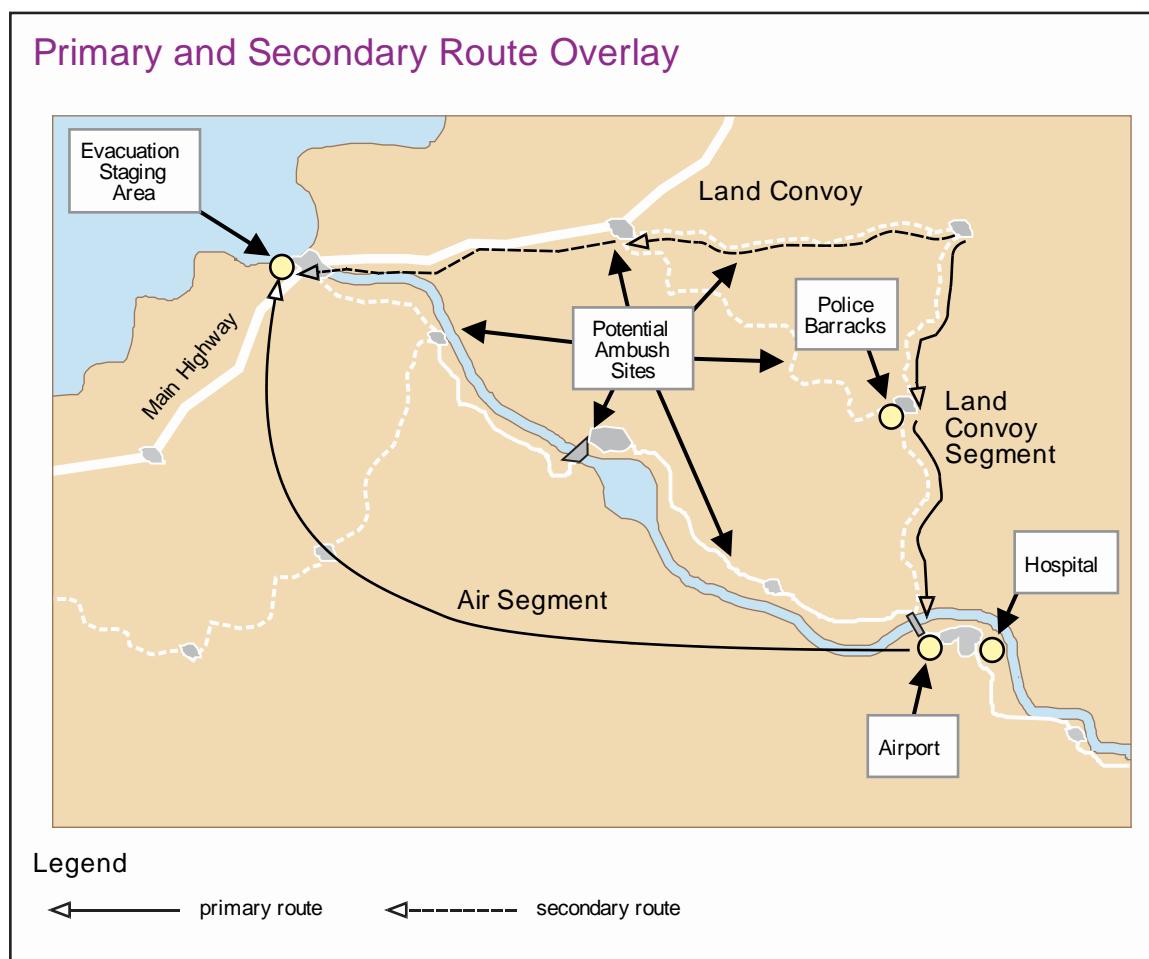


Figure E-2. Primary and Secondary Route Overlay

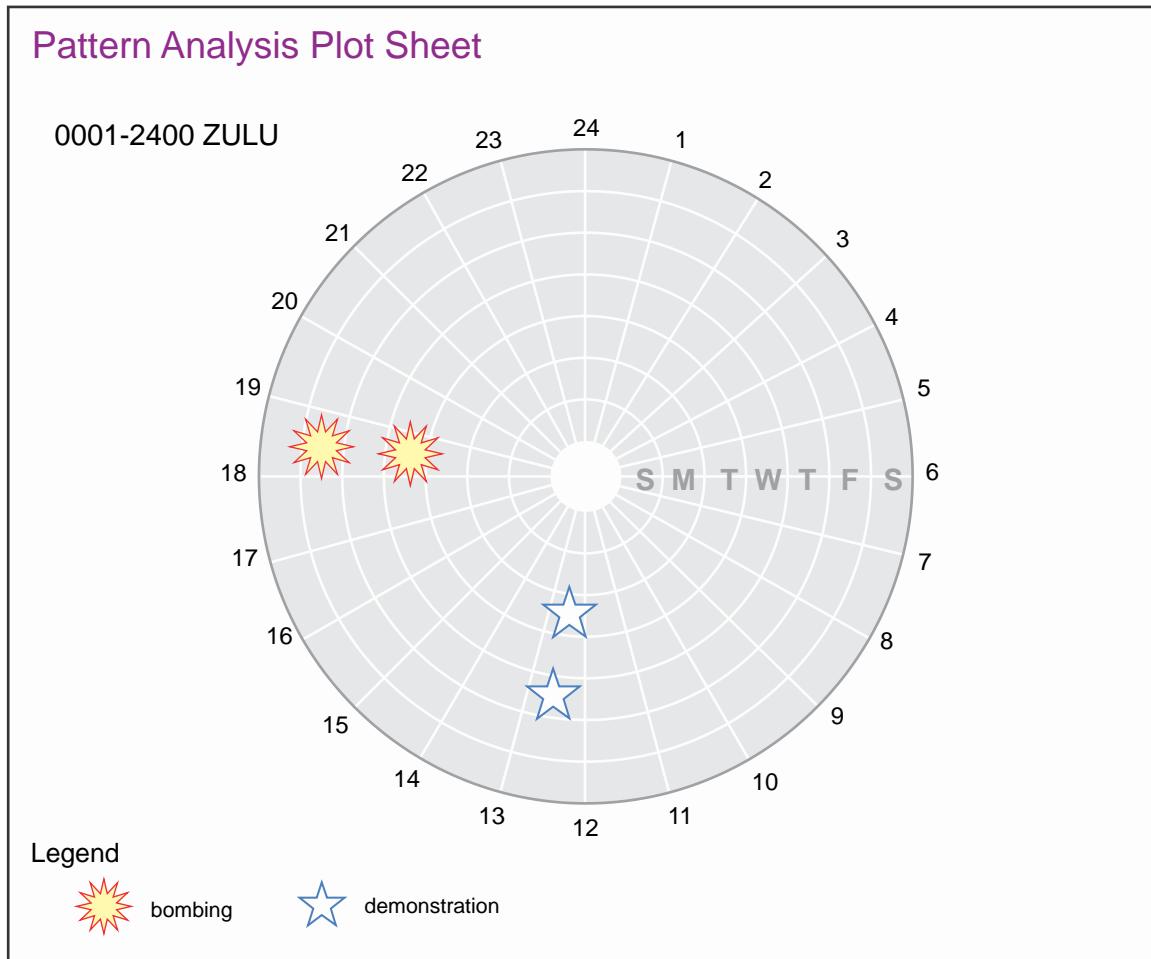


Figure E-3. Pattern Analysis Plot Sheet

Analysts may choose to modify this product to track longer or shorter periods as appropriate.

5. Quarantine or Contaminated Area Overlay

Quarantine or contaminated area overlays may be used to delineate areas that are off limits or quarantined due to the presence of disease outbreaks, TIM hazards, or CBRN contamination (see Figure E-4). Such overlays are useful during passive defense measures such as avoidance, protection, and decontamination operations, and in CBRN consequence management operations such as a response to pandemic disease outbreaks.

6. Population Support Overlay

Population support overlays can graphically depict the sectors of the populace that are pro-government, anti-government, pro-insurgent, anti-insurgent, uncommitted, and neutral (see Figure E-5). These overlays are important because they help analysts

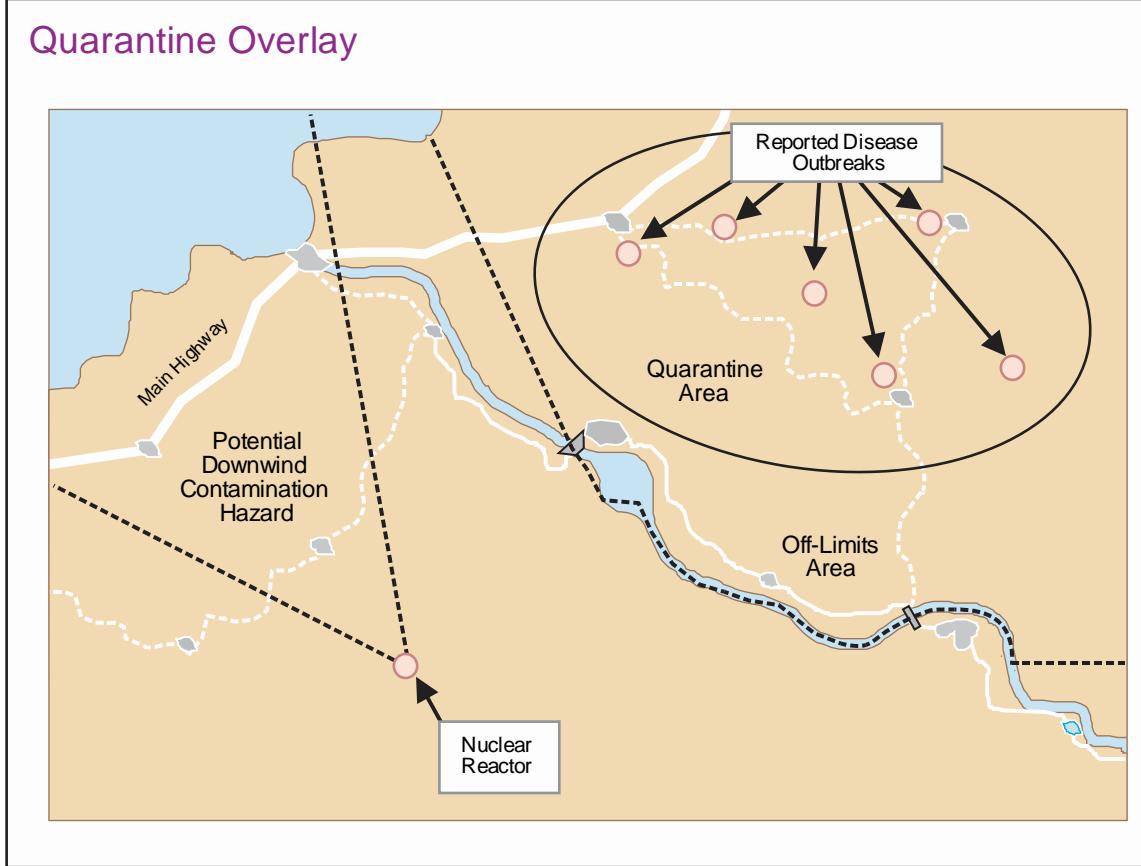


Figure E-4. Quarantine Overlay

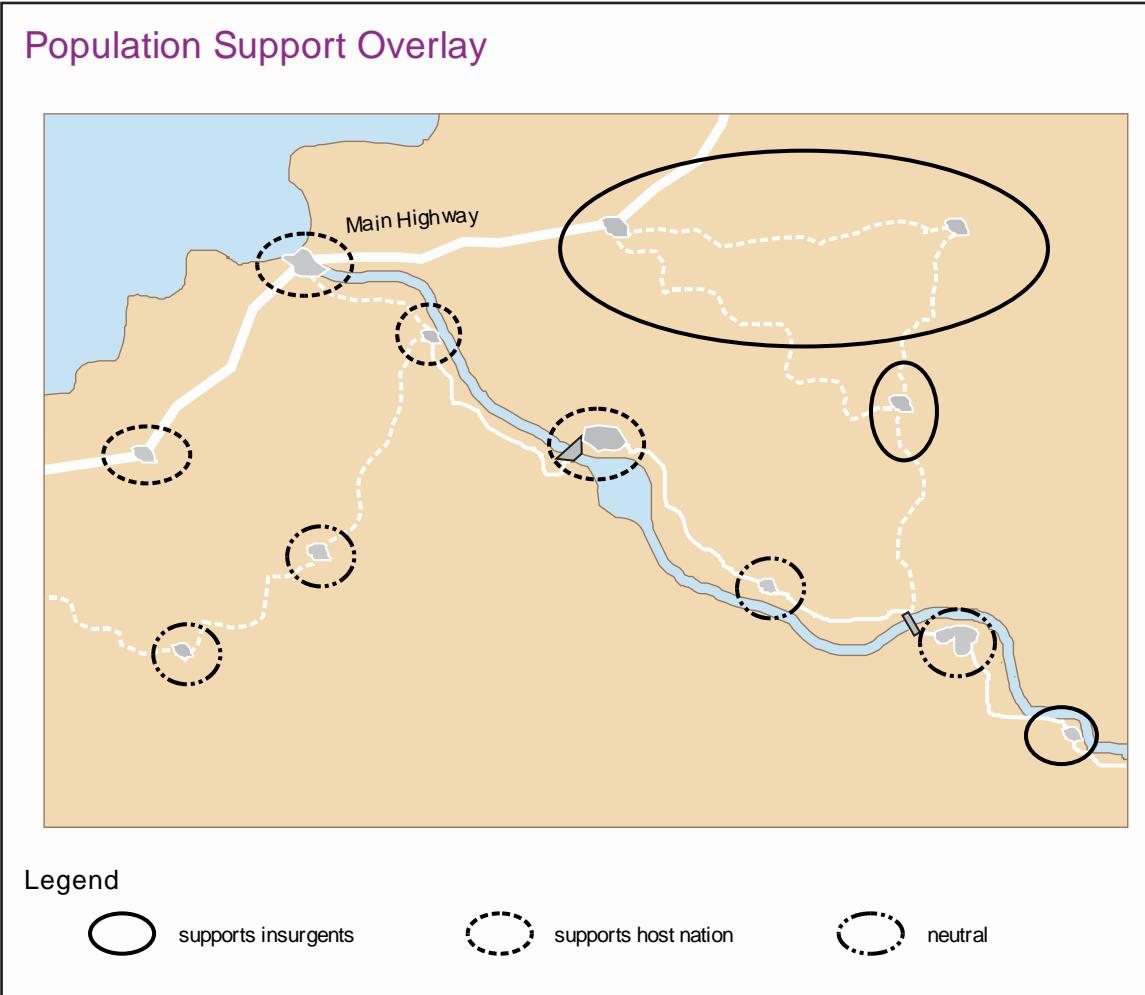
determine whether the local populace is likely to support the HN government or support the insurgency.

7. Legal Status Overlay

Legal status overlays may be constructed to depict the impact on the OE of established or planned ROE and international law, including the law of the sea (see Figure E-6). These overlays display actual or potential “no-strike” areas.

8. Religion, Race, and Ethnicity Overlay

Religion, race, and ethnicity issues often contribute to conflicts. Religious, race, and ethnicity overlays depict the current ethnic and religious makeup of an operational area. These overlays can also display any specific religious-, racial-, or ethnicity-specific areas and any zones of separation agreed upon by peace accords. These three overlays may be separate or combined. Figure E-7 shows an example of an ethnicity overlay.

**Figure E-5. Population Support Overlay**

9. Perceptions Assessment Matrix

Although the perception of a HN's population may be difficult to gauge, it is key to successfully planning, executing, and assessing joint operations. In-depth knowledge and understanding of the national, regional, and local cultures, norms, moralities, and taboos are needed to understand the OE and reactions of the population to friendly operations. Perceptions assessment matrices may be used to characterize and summarize public perceptions regarding various conditions (see Figure E-8).

10. Activities Matrix

Relationships (links) in large data sets are established by similarities between the nodes. Figure E-9 shows an example of an activities matrix. People are identified by their participation in independent activities. When graphed, pairs who have engaged in the same activity (columns with dots) are designated with a link on the network analysis diagram.

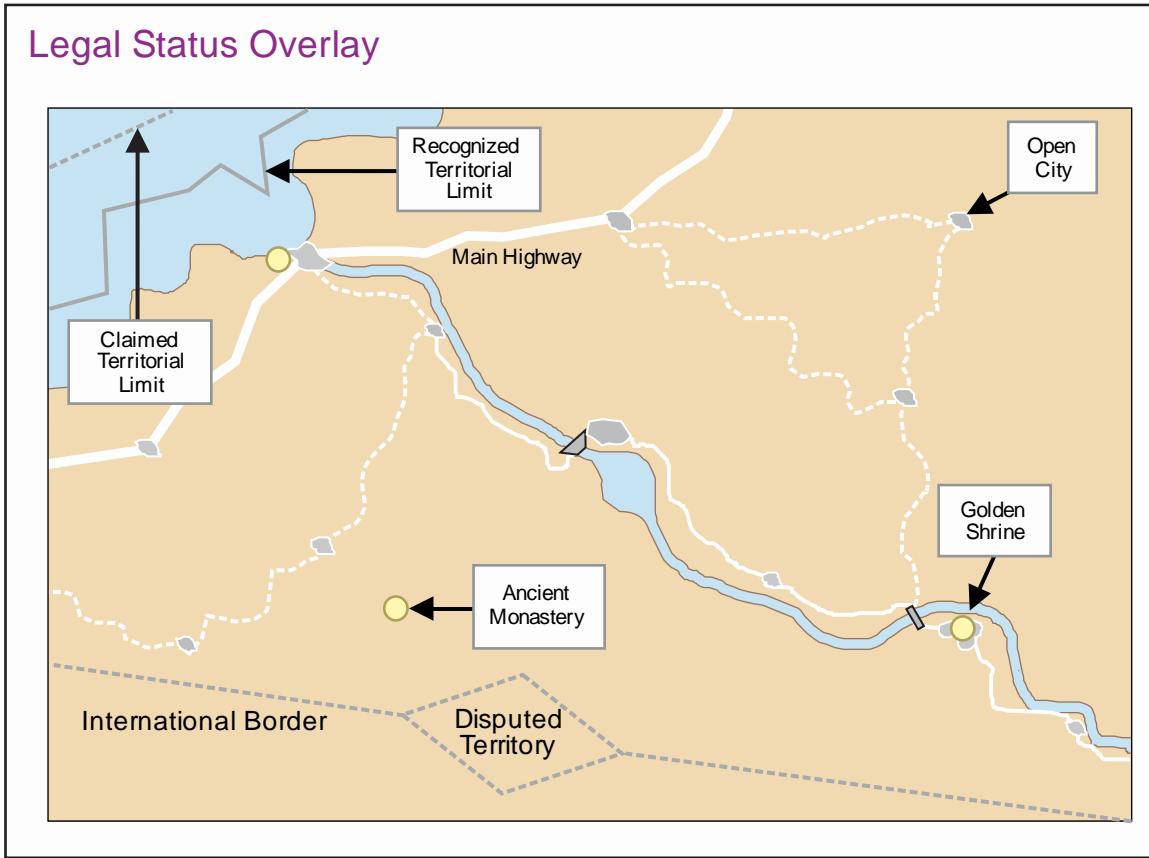


Figure E-6. Legal Status Overlay

11. Association Matrix

An association matrix portrays the existence of an association, known or suspected, between individuals or entities (see Figure E-10). Association matrices provide a relatively one-dimensional view of the relationships among entities, but can be used by analysts to help focus their attention on entities and relationships requiring greater detail.

12. Link Diagram

Link diagrams graphically depict relationships between people, events, locations, or other factors deemed significant in any given situation (see Figure E-11). Link diagrams help analysts better understand how people and factors are interrelated in order to determine key links. Circles are used to represent people. Solid lines or dashed lines are used to indicate confirmed or suspected relationships respectively. Boxes, rectangles, and squares are used around circles to represent an individual's membership or association in a number of things such as an organization, cell, or event. Two boxes may overlap if an individual is associated with two organizations or events. If two individuals are placed within a box, their association is assumed and hence no line is needed between them. Crossing lines should be avoided as much as possible to preclude confusion.

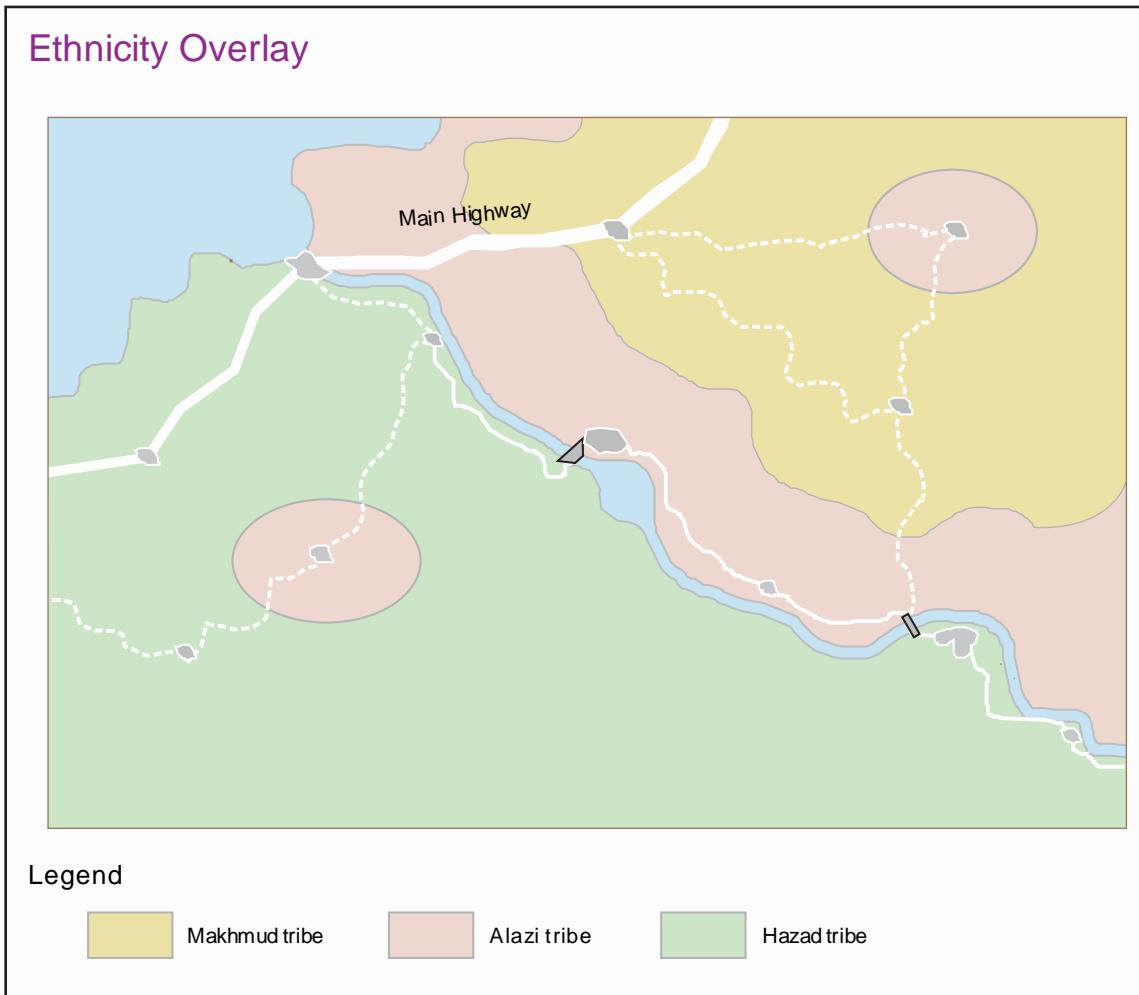


Figure E-7. Ethnicity Overlay

13. Identity Intelligence Related Products

- a. **Biometric watch lists** identify persons of interest by biometric sample instead of by name, and specify the recommended action to be taken upon encountering each individual.
- b. **Persons of interest overlays** are biometrically enabled geospatial products designed for the purpose of driving targeted operations that are the most likely to encounter persons of interest.
- c. **Biometric focused area studies** are biometric geospatial detailed analyses for a known area. These products enhance operational planning and situational awareness of what individuals are operating in an area. If appropriate, there will also be biometric network analysis (link charts) to display individuals who are linked through biometric matches. See Figure E-12.

Appendix E

Condition	Cultural Norm	Proposed Alternative	Population's Perception	Acceptable Difference in Perception	Roots of Difference	Possible Change to Perception	Proposed Solution	Possible Consequences
Food Shortages	Rice	Meat and potatoes	Inadequate; inconsiderate	No	Culturally accepted norms; no known physically detrimental effects	No	Offer potatoes; seek exchange for rice	Starvation; nothing
Use of Firearms	Criminal elements carry weapons openly	Confiscate all weapons	Unfair; population not protected by traditional means	No	Culture; criminal element provides a measure of security for population	No; population and friendly forces at risk	Military information support operations program; weapons turn-in program	Civil unrest; armed backlash
Government Structure	Tribal	Hierarchical	Tolerable as long as needs are fulfilled by group in charge	Yes	History	No	Bargain	Unknown
Language	Dual languages; Creole and Dutch	Respect all languages	Unfair; show of favoritism	Yes	History; national language	Yes	Communicate in all languages when possible	Backlash against elite and friendly forces

Figure E-8. Perceptions Assessment Matrix

d. **I2 support packages** provide detailed information about threat activity and potential high-threat areas within the OE. These products significantly enhance understanding of where threat actors are operating and the weapons, TTP, and actors they may be employing. I2 support packages enable improved force protection, targeted operations, enhanced intelligence collection, and coordinated operation planning in a multinational environment.

		Death Squads	Drug Trafficking	Arms Smuggling	Supports Terrorism	Politician	Name of Individual
		Remarks					
	Ambitious, wants to become president	●				★	Argubright
			★				Boaz
	Constantly persecuted Possible inside ally	★		★			Brehany
	Crafty and very diplomatic	★			●	★	Copeland
		★			★	★	Grim
Warrant	Known to have conducted executions	★			★		James
			★	★		★	Kanakis
						★	Manning
Warrant				★	★		Norvell
		●					Riley
	Tactical genius	★				●	Swansburg
		★				★	Williams

Legend



★ confirmed ● suspected

Figure E-9. Activities Matrix

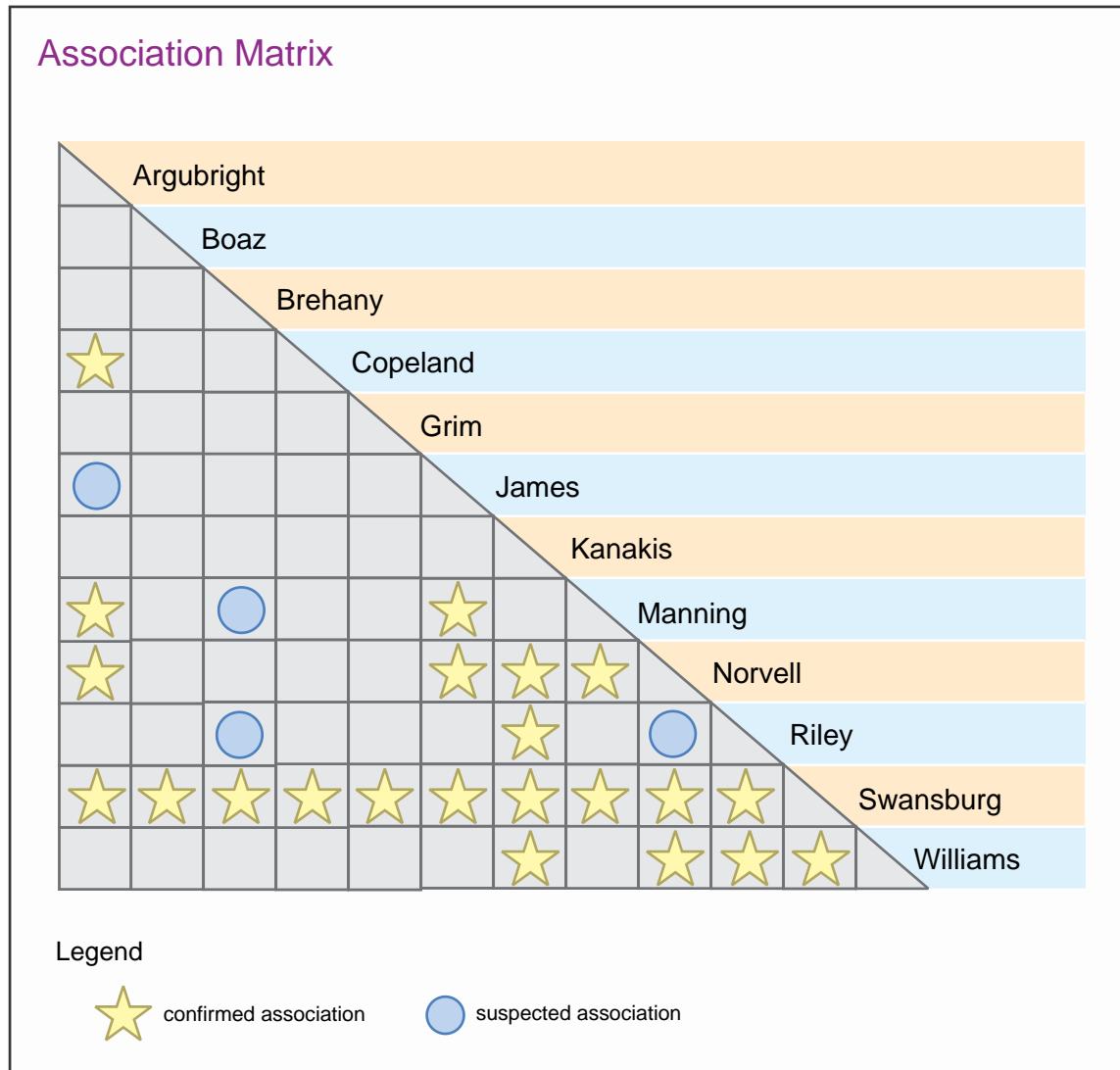


Figure E-10. Association Matrix

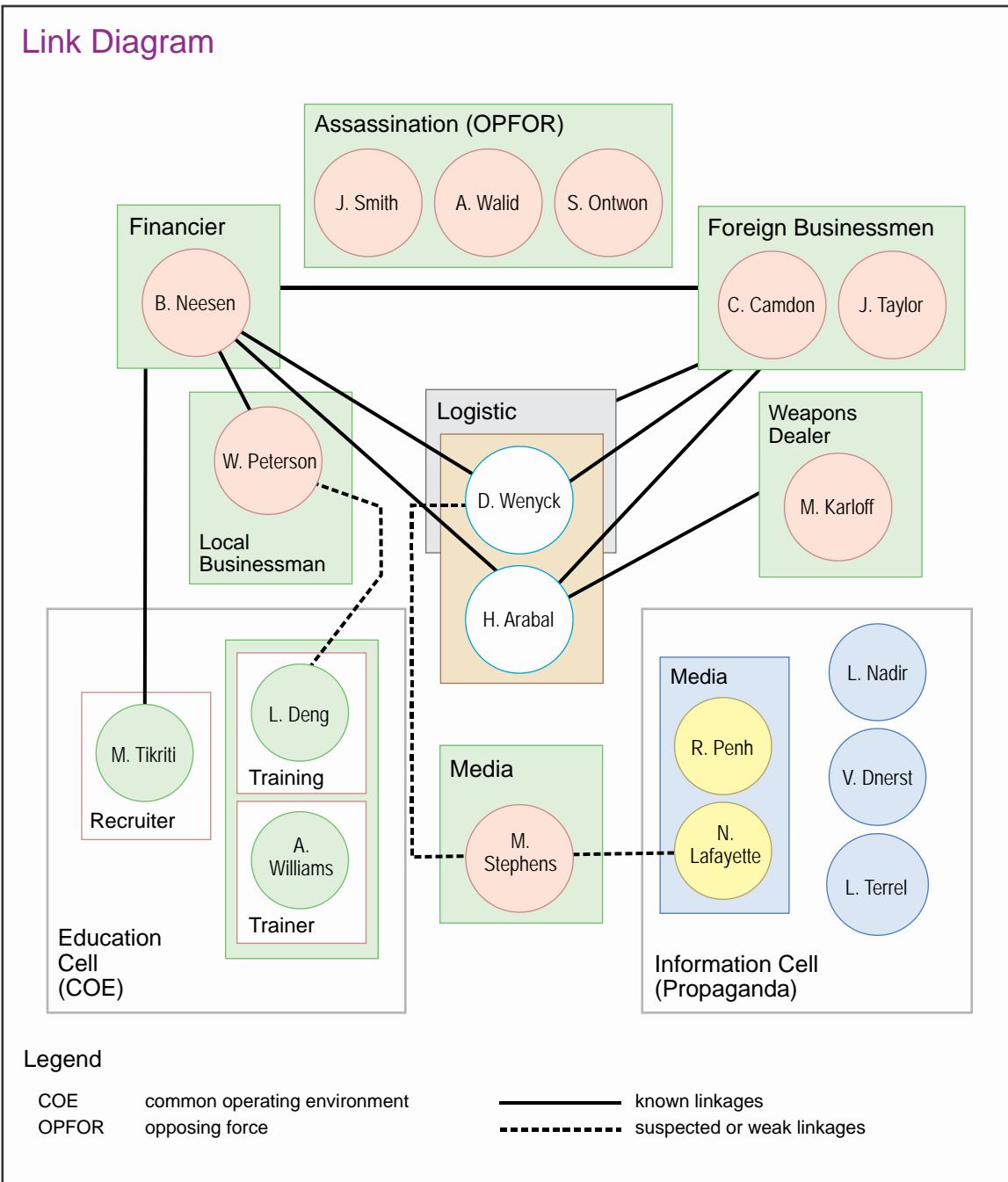


Figure E-11. Link Diagram

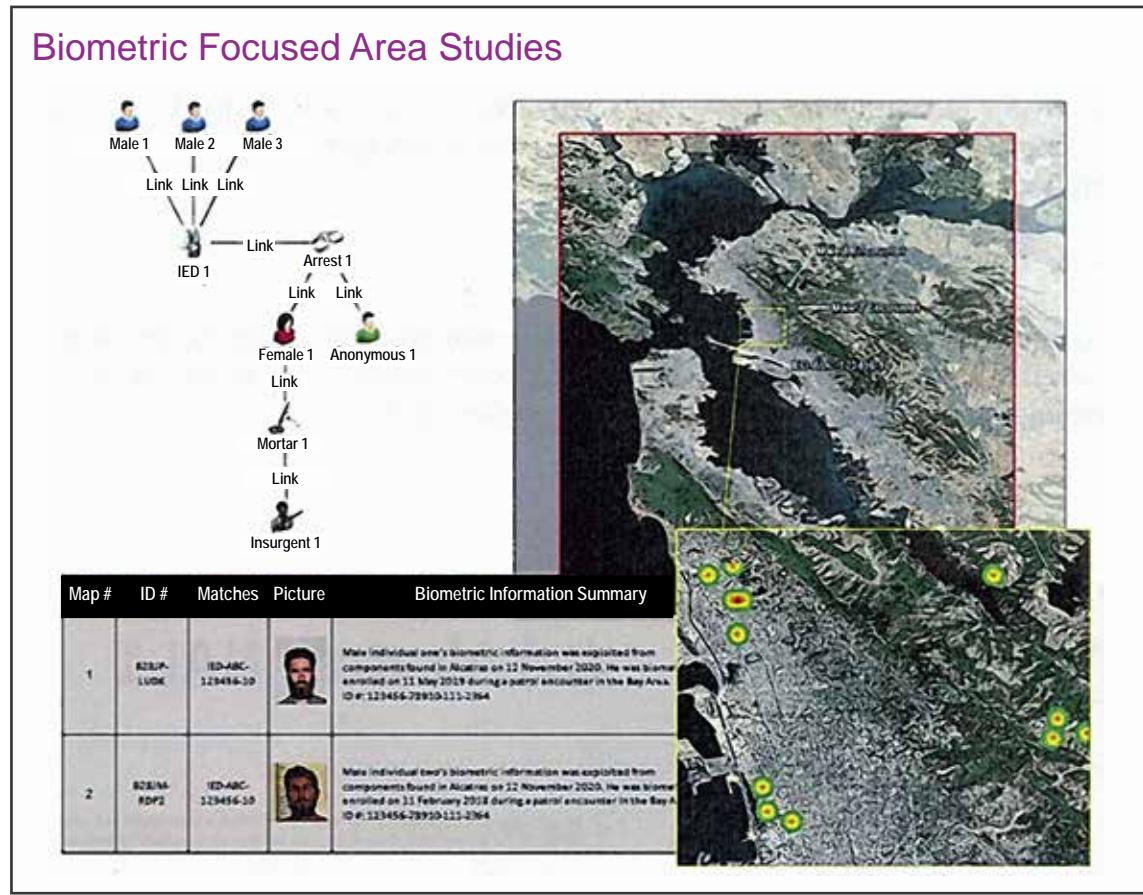


Figure E-12. Biometric Focused Area Studies

APPENDIX F REFERENCES

The development of JP 2-01.3 is based upon the following primary references.

1. Department of Defense

- a. DODD 5530.3, *International Agreements*.
- b. DOD Instruction 3115.10E, *Intelligence Support to Personnel Recovery*.
- c. Military Standard-2525C, *Common Warfighting Symbology*.

2. Chairman of the Joint Chiefs of Staff

- a. CJCSI 3900.01C, *Position (Point and Area) Reference Procedures*.
- b. CJCSM 3320.01C, *Joint Electromagnetic Spectrum Management Operations in the Electromagnetic Operational Environment*.

3. Joint Publications

- a. JP 1, *Doctrine for the Armed Forces of the United States*.
- b. JP 2-0, *Joint Intelligence*.
- c. JP 2-01, *Joint and National Intelligence Support to Military Operations*.
- d. JP 2-01.2, *Counterintelligence and Human Intelligence Support to Joint Operations*.
- e. JP 2-03, *Geospatial Intelligence in Joint Operations*.
- f. JP 3-0, *Joint Operations*.
- g. JP 3-01, *Countering Air and Missile Threats*.
- h. JP 3-05, *Special Operations*.
- i. JP 3-06, *Joint Urban Operations*.
- j. JP 3-07.2, *Antiterrorism*.
- k. JP 3-07.3, *Peace Operations*.
- l. JP 3-07.4, *Counterdrug Operations*.
- m. JP 3-08, *Interorganizational Coordination During Joint Operations*.

Appendix F

- n. JP 3-10, *Joint Security Operations in Theater.*
- o. JP 3-11, *Operations in Chemical, Biological, Radiological, and Nuclear Environments.*
- p. JP 3-12, *Cyberspace Operations.*
- q. JP 3-13, *Information Operations.*
- r. JP 3-13.1, *Electronic Warfare.*
- s. JP 3-13.2, *Military Information Support Operations.*
- t. JP 3-15.1, *Counter-Improvised Explosive Device Operations.*
- u. JP 3-16, *Multinational Operations.*
- v. JP 3-22, *Foreign Internal Defense.*
- w. JP 3-24, *Counterinsurgency Operations.*
- x. JP 3-34, *Joint Engineer Operations.*
- y. JP 3-40, *Countering Weapons of Mass Destruction.*
- z. JP 3-50, *Personnel Recovery.*
- aa. JP 3-57, *Civil-Military Operations.*
- bb. JP 3-59, *Meteorological and Oceanographic Operations.*
- cc. JP 3-60, *Joint Targeting.*
- dd. JP 3-61, *Public Affairs.*
- ee. JP 3-68, *Noncombatant Evacuation Operations.*
- ff. JP 4-0, *Joint Logistics.*
- gg. JP 4-02, *Health Services.*
- hh. JP 5-0, *Joint Operation Planning.*
- ii. JP 6-0, *Joint Communications System.*

4. Multi-Service Publication

Field Manual (FM) 3-24/Marine Corps Warfighting Publication (MCWP) 3-33.5, *Counterinsurgency.*

5. Army Publications

- a. Army Tactical Publication 2-01.3, *Intelligence Preparation of the Battlefield*.
- b. Army Doctrine Publication 2-0, *Intelligence*.
- c. Army Doctrine Reference Publication 2-0, *Intelligence*.
- d. FM 2-22.3, *Human Intelligence Collector Operations*.
- e. Army Tactics, Techniques, and Procedures 3-34.80, *Geospatial Engineering*.

6. Marine Corps Publications

- a. Marine Corps Doctrine Publication 1, *Warfighting*.
- b. MCWP 2-1, *Intelligence Operations*.
- c. MCWP 2-12, *Marine Air-Ground Task Force (MAGTF) Intelligence Analysis and Production*.

7. Navy Publication

Navy Warfare Publication 2-01, *Intelligence Support to Naval Operations*.

8. Air Force Publications

- a. Air Force Doctrine Annex 2-0, *Global Integrated Intelligence, Surveillance, and Reconnaissance Operations*.
- b. Air Force Doctrine Annex 3-50, *Personnel Recovery Operations*.
- c. Air Force Pamphlet 14-118, *Aerospace Intelligence Preparation of the Battlespace*.

9. General

- a. Medby, Jamison Jo, and Russell W. Glenn. *Street Smarts: Intelligence Preparation of the Battlespace for Urban Operations*. Santa Monica, CA: The RAND Corporation, 2002.
- b. Thomas, Troy S., Major, US Air Force, *Beneath the Surface: Intelligence Preparation of the Battlespace for Counterterrorism*. Washington, DC: Center for Strategic Intelligence Research, Joint Military Intelligence College, 2004.
- c. Defense Intelligence Agency, *Weapons Technical Intelligence (WTI) Handbook*.

Appendix F

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APPENDIX G ADMINISTRATIVE INSTRUCTIONS

1. User Comments

Users in the field are highly encouraged to submit comments on this publication to: Joint Staff J-7, Deputy Director, Joint Education and Doctrine, ATTN: Joint Doctrine Analysis Division, 116 Lake View Parkway, Suffolk, VA 23435-2697. These comments should address content (accuracy, usefulness, consistency, and organization), writing, and appearance.

2. Authorship

The lead agent and Joint Staff doctrine sponsor for this publication is the Director for Intelligence (J-2).

3. Supersession

This publication supersedes JP 2-01.3, 16 June 2009, *Joint Tactics, Techniques, and Procedures for Joint Intelligence Preparation of the Battlespace*.

4. Change Recommendations

- a. Recommendations for urgent changes to this publication should be submitted:

TO: JOINT STAFF WASHINGTON DC//J7-JED//

- b. Routine changes should be submitted electronically to the Deputy Director, Joint Education and Doctrine, ATTN: Joint Doctrine Analysis Division, 116 Lake View Parkway, Suffolk, VA 23435-2697, and info the lead agent and the Director for Joint Force Development, J-7/JED.

- c. When a Joint Staff directorate submits a proposal to the CJCS that would change source document information reflected in this publication, that directorate will include a proposed change to this publication as an enclosure to its proposal. The Services and other organizations are requested to notify the Joint Staff J-7 when changes to source documents reflected in this publication are initiated.

5. Distribution of Publications

Local reproduction is authorized, and access to unclassified publications is unrestricted. However, access to and reproduction authorization for classified JPs must be IAW DOD Manual 5200.01, Volume 1, *DOD Information Security Program: Overview, Classification, and Declassification*, and DOD Manual 5200.01, Volume 3, *DOD Information Security Program: Protection of Classified Information*.

6. Distribution of Electronic Publications

- a. Joint Staff J-7 will not print copies of JPs for distribution. Electronic versions are available on JDEIS Joint Electronic Library Plus (JEL+) at <https://jdeis.js.mil/jdeis/index.jsp> (NIPRNET) and <http://jdeis.js.smil.mil/jdeis/index.jsp> (SIPRNET), and on the JEL at <http://www.dtic.mil/doctrine> (NIPRNET).
- b. Only approved JPs are releasable outside the combatant commands, Services, and Joint Staff. Release of any classified JP to foreign governments or foreign nationals must be requested through the local embassy (Defense Attaché Office) to DIA, Defense Foreign Liaison/PO-FL, Room 1E811, 7400 Pentagon, Washington, DC 20301-7400.
- c. JEL CD-ROM. Upon request of a joint doctrine development community member, the Joint Staff J-7 will produce and deliver one CD-ROM with current JPs. This JEL CD-ROM will be updated not less than semi-annually and when received can be locally reproduced for use within the combatant commands, Services, and combat support agencies.

GLOSSARY

PART I—ABBREVIATIONS AND ACRONYMS

AOI	area of interest
C2	command and control
CBRN	chemical, biological, radiological, and nuclear
CCDR	combatant commander
CCMD	combatant command
CI	counterintelligence
C-IED	counter-improvised explosive device
CJCS	Chairman of the Joint Chiefs of Staff
CJCSI	Chairman of the Joint Chiefs of Staff instruction
CJCSM	Chairman of the Joint Chiefs of Staff manual
CMO	civil-military operations
CO	cyberspace operations
COA	course of action
COG	center of gravity
COIC	Counter-Improvised Explosive Device
CONOPS	Operations/Intelligence Integration Center (JIEDDO)
COP	concept of operations
CSA	common operational picture
CSS	combat support agency
	Central Security Service (NSA)
DC	dislocated civilian
DCO	defensive cyberspace operations
DFE	Defense Intelligence Agency forward element
DIA	Defense Intelligence Agency
DNI	Director of National Intelligence
DOD	Department of Defense
DODD	Department of Defense directive
DOS	Department of State
DTA	dynamic threat assessment
DTRA	Defense Threat Reduction Agency
EMS	electromagnetic spectrum
EW	electronic warfare
EXORD	execute order
FM	field manual (Army)
GCC	geographic combatant commander
GEOINT	geospatial intelligence
GI&S	geospatial information and services
GPE	geospatial intelligence preparation of the environment

Glossary

HN	host nation
HPT	high-payoff target
HSI	hyperspectral imagery
HUMINT	human intelligence
HVT	high-value target
I2	identity intelligence
IC	intelligence community
IED	improvised explosive device
IGO	intergovernmental organization
IO	information operations
IPB	intelligence preparation of the battlespace
IR	infrared
IRC	information-related capability
ISR	intelligence, surveillance, and reconnaissance
IW	irregular warfare
J-2	intelligence directorate of a joint staff
J-2E	joint force exploitation staff element
J-2X	joint force counterintelligence and human intelligence staff element
J-3	operations directorate of a joint staff
J-4	logistics directorate of a joint staff
J-5	plans directorate of a joint staff
J-6	communications system directorate of a joint staff
J-7	operational plans and interoperability directorate of a joint staff
J-9	civil-military operations directorate of a joint staff
JCC	joint cyberspace center
JFC	joint force commander
JFLCC	joint force land component commander
JIACG	joint interagency coordination group
JIEDDO	Joint Improvised Explosive Device Defeat Organization
JIOC	joint intelligence operations center
JIPOE	joint intelligence preparation of the operational environment
JISE	joint intelligence support element
JOA	joint operations area
JOPP	joint operation planning process
JP	joint publication
JS	the Joint Staff
JTF	joint task force
LOC	line of communications
LOS	line of sight

MCOO	modified combined obstacle overlay
MCWP	Marine Corps warfighting publication
METOC	meteorological and oceanographic
MILDEC	military deception
MIPOE	medical intelligence preparation of the operational environment
MIS	military information support
MISO	military information support operations
MOE	measure of effectiveness
MOP	measure of performance
MSI	multispectral imagery
NAI	named area of interest
NEO	noncombatant evacuation operation
NGA	National Geospatial-Intelligence Agency
NGO	nongovernmental organization
NSA	National Security Agency
OB	order of battle
OCO	offensive cyberspace operations
OCS	operational contract support
OE	operational environment
OPLAN	operation plan
OPSEC	operations security
PIR	priority intelligence requirement
PMESII	political, military, economic, social, information, and infrastructure
PNT	positioning, navigation, and timing
PR	personnel recovery
RFI	request for information
ROE	rules of engagement
RUF	rules for the use of force
SAR	synthetic aperture radar
SCA	sociocultural analysis
SecDef	Secretary of Defense
SIGINT	signals intelligence
SLCM	sea-launched cruise missile
SLOC	sea line of communications
SMO	senior meteorological and oceanographic officer
SOF	special operations forces
STO	special technical operations
TAI	target area of interest

Glossary

TIM	toxic industrial material
TPP	tactics, techniques, and procedures
UN	United Nations
USAID	United States Agency for International Development
USG	United States Government
USNORTHCOM	United States Northern Command
USPACOM	United States Pacific Command
WMD	weapons of mass destruction
WTI	weapons technical intelligence

PART II—TERMS AND DEFINITIONS

adversary template. A model based on an adversary's known or postulated preferred methods of operation illustrating the disposition and activity of adversary forces and assets conducting a particular operation unconstrained by the impact of the operational environment. (JP 1-02. SOURCE: JP 2-01.3)

avenue of approach. An air or ground route of an attacking force of a given size leading to its objective or to key terrain in its path. Also called **AA**. (JP 1-02. SOURCE: JP 2-01.3)

beach photography. None. (Approved for removal from JP 1-02.)

beach survey. None. (Approved for removal from JP 1-02.)

beach width. None. (Approved for removal from JP 1-02.)

begin morning civil twilight. The period of time at which the sun is halfway between beginning morning and nautical twilight and sunrise, when there is enough light to see objects clearly with the unaided eye. Also called **BMCT**. (Approved for incorporation into JP 1-02.)

begin morning nautical twilight. The start of that period where, in good conditions and in the absence of other illumination, the sun is 12 degrees below the eastern horizon and enough light is available to identify the general outlines of ground objects and conduct limited military operations. Also called **BMNT**. (Approved for incorporation into JP 1-02.)

critical point. None. (Approved for removal from JP 1-02.)

decision support template. A combined intelligence and operations graphic based on the results of wargaming that depicts decision points, timelines associated with movement of forces and the flow of the operation, and other key items of information required to execute a specific friendly course of action. Also called **DST**. (Approved for incorporation into JP 1-02.)

end evening civil twilight. The point in time when the sun has dropped 6 degrees beneath the western horizon, and is the instant at which there is no longer sufficient light to see objects with the unaided eye. Also called **EECT**. (Approved for incorporation into JP 1-02.)

end of evening nautical twilight. The point in time when the sun has dropped 12 degrees below the western horizon, and is the instant of last available daylight for the visual control of limited military operations. Also called **EENT**. (Approved for incorporation into JP 1-02.)

enemy capabilities. None. (Approved for removal from JP 1-02.)

event matrix. A cross-referenced description of the indicators and activity expected to occur in each named area of interest. (Approved for incorporation into JP 1-02.)

event template. A guide for collection planning that depicts the named areas of interest where activity, or its lack of activity, will indicate which course of action the adversary has adopted. (Approved for incorporation into JP 1-02.)

exploitation. 1. Taking full advantage of success in military operations, following up initial gains, and making permanent the temporary effects already created. 2. Taking full advantage of any information that has come to hand for tactical, operational, or strategic purposes. 3. An offensive operation that usually follows a successful attack and is designed to disorganize the enemy in depth. (Approved for incorporation into JP 1-02.)

first light. None. (Approved for removal from JP 1-02.)

intelligence preparation of the battlespace. The analytical methodologies employed by the Services or joint force component commands to reduce uncertainties concerning the enemy, environment, time, and terrain. Also called **IPB**. (Approved for incorporation into JP 1-02.)

joint intelligence preparation of the operational environment. The analytical process used by joint intelligence organizations to produce intelligence estimates and other intelligence products in support of the joint force commander's decision-making process. Also called **JIPOE**. (Approved for incorporation into JP 1-02.)

key terrain. Any locality, or area, the seizure or retention of which affords a marked advantage to either combatant. (JP 1-02. SOURCE: JP 2-01.3)

line of communications. A route, either land, water, and/or air, that connects an operating military force with a base of operations and along which supplies and military forces move. Also called **LOC**. (JP 1-02. SOURCE: JP 2-01.3)

littoral. The littoral comprises two segments of operational environment: 1. Seaward: the area from the open ocean to the shore, which must be controlled to support operations ashore. 2. Landward: the area inland from the shore that can be supported and defended directly from the sea. (JP 1-02. SOURCE: JP 2-01.3)

military geography. None. (Approved for removal from JP 1-02.)

mobility corridor. Areas that are relatively free of obstacles where a force will be canalized due to terrain restrictions allowing military forces to capitalize on the principles of mass and speed and are therefore relatively free of obstacles. (Approved for incorporation into JP 1-02.)

modified combined obstacle overlay. A joint intelligence preparation of the operational environment product used to portray the militarily significant aspects of the operational environment, such as obstacles restricting military movement, key

geography, and military objectives. Also called **MCOO**. (JP 1-02. SOURCE: JP 2-01.3)

named area of interest. A geospatial area or systems node or link against which information that will satisfy a specific information requirement can be collected, usually to capture indications of adversary courses of action. Also called **NAI**. (Approved for incorporation into JP 1-02.)

order of battle. The identification, strength, command structure, and disposition of the personnel, units, and equipment of any military force. Also called **OB; OOB**. (JP 1-02. SOURCE: JP 2-01.3)

situation template. A depiction of assumed adversary dispositions, based on that adversary's preferred method of operations and the impact of the operational environment if the adversary should adopt a particular course of action. (JP 1-02. SOURCE: JP 2-01.3)

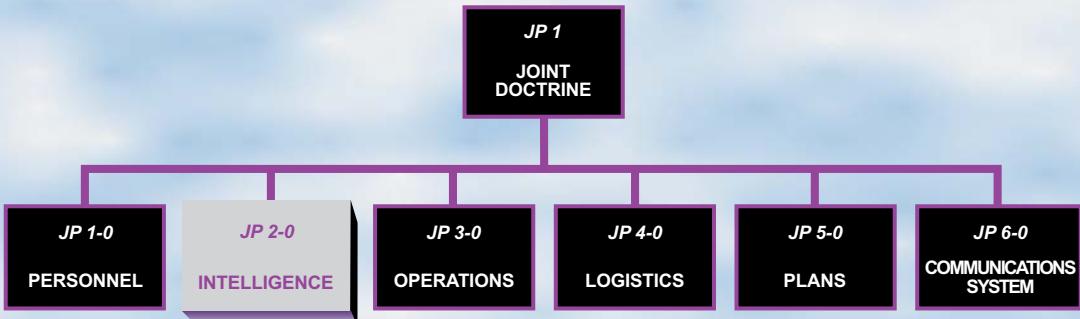
sociocultural factors. The social, cultural, and behavioral factors characterizing the relationships and activities of the population of a specific region or operational environment. (JP 1-02. SOURCE: JP 2-01.3)

target area of interest. The geographical area where high-value targets can be acquired and engaged by friendly forces. Also called **TAI**. (Approved for incorporation into JP 1-02.)

Glossary

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JOINT DOCTRINE PUBLICATIONS HIERARCHY



All joint publications are organized into a comprehensive hierarchy as shown in the chart above. **Joint Publication (JP) 2-01.3** is in the **Intelligence** series of joint doctrine publications. The diagram below illustrates an overview of the development process:

