



JOINT OPERATION PLANNING PROCESS (JOPP) WORKBOOK

NWC 4111J
w/Chg 1

(Instructional Workbook for In-Class Work/Wargaming)

JMO Department, Naval War College
1 July 2013 (With Chg1)

INTENTIONALLY BLANK

Preface

This document provides a framework to conduct military planning requiring the employment of forces. It is intentionally written for a joint audience, though the concepts and language are also applicable for Navy tactical and operational level units. It is based on the JP 5-0 *Joint Operation Planning*, Navy's NWP 5-01 *Navy Planning*, U.S. Marine Corps Doctrinal Publications (MCDP) 1 *Warfighting* and MCDP 6 *Command and Control*, and MCWP 5-1 *Marine Corps Planning Process*, the U.S. Army Command and General Staff College series of publications ST 100-9 *The Tactical Decision Making Process*, ST 101-5 *Command and Staff Decision Processes*, JAWS *Campaign Planning Primer*, CJCSM 3500.040D *Universal Joint Task List (UJTL)*, Army War College *Campaign Planning Handbook*, U.S. Army FM 3.0 *Operations*, U.S. Army FM 5.0 *Army Planning and Orders Production*, JP 3-0 *Joint Operations*, JP 3-33 *Joint Task Force Headquarters*, and JP 2-01.3 *Joint Tactics, Techniques, and Procedures for Joint Intelligence Preparation of the Operational Environment*, and a variety of products from the Joint Warfighting Center. We appreciate the language and concepts found in many of these documents and when appropriate we have used their exact wording. The format is designed to accommodate planning requirements regardless of the size of the force involved, the environment, and the scale of the objectives to be accomplished. The format is also intended to be applied across the full range of military operations.

Summary of Major Changes

This edition of the NWC 4111 workbook is consistent with the processes and techniques found in the previous publication NWC 4111H and only serve as an update to those procedures as necessitated by recent joint doctrinal changes. The most significant adjustments found in this version are as follow:

- Past versions of this workbook attempted to harmonize the Navy Planning Process (NPP) with the Joint Planning Process (JOPP). This version focuses primarily upon the JOPP, while highlighting areas of interest to the NPP planning community. As such, this workbook uses the JOPP steps to planning and not the NPP steps. NPP users should use the actual NWP 5-01, *Navy Planning* manual in lieu this workbook.
- Modifications have been added to reflect the changes induced by JP 5-0 *Joint Operation Planning*. These include: Design methodology (Operational Design in joint usage), Global Force Management (GFM), the replacement of “enemy” with “adversary,” the use of both “governing factors” which come from the commander and “evaluation criteria” which are informed by the commander’s governing factors and also include other staff developed criteria. New appendices were added to assist planning activities. These include: design methodology, deliberate planning procedures, force generation processes, staff estimates, and operational assessment.
- Change 1 reflects minor editorial corrections to the previous version of NWC 4111J.

INTENTIONALLY BLANK

Table of Contents

	<i>Page</i>
PREFACE.....	ii
THE JOINT OPERATION PLANNING PROCESS (JOPP).....	1
STEP1: PLANNING INITIATION.....	1-1
JOINT INTELLIGENCE PREPARATION OF THE OPERATIONAL ENVIRONMENT (JIPOE)	1-1
STEP 2: MISSION ANALYSIS.....	2-1
1. Determine Planning Facts.....	2-2
2. The Source(s) of the Mission.....	2-2
3. Identify the “Supported” and “Supporting Commanders” and Agencies.....	2-2
4. Analyze the Higher Commander's Mission.....	2-2
5. State the Higher Commander’s Intent.....	2-3
6. Determine specified, implied, and essential tasks.....	2-5
7. Identify Externally Imposed Operational Limitations.....	2-7
8. Analysis of Available Forces and Assets.....	2-8
9. Identify Higher Command’s Assumptions and Create Your Own Assumptions....	2-9
10. Conduct an Initial Risk Assessment.....	2-11
11. Develop Restated Mission Statement.....	2-11
Mission Analysis Brief.....	2-13
Commander’s Guidance and Intent.....	2-14
Warning Order.....	2-18
STEP 3: COURSES OF ACTION (COA) DEVELOPMENT.....	3-1
1. Generate Options.....	3-1
2. Test for Validity.....	3-6
3. Recommend Command and Control Arrangements.....	3-7
4. Develop the Course of Action statement and sketch for each COA.....	3-7
STEP 4: COURSE OF ACTION ANALYSIS (WARGAMING).....	4-1
1. Organize for the War game.....	4-4
2. List all Friendly Forces.....	4-4
3. Review Assumptions.....	4-4
4. List Known Critical Events.....	4-5
5. Determine the Evaluation Criteria.....	4-5
7. Record and Display Results.....	4-7
8. War Game the Operation and Assess the Results.....	4-8

STEP 5: COURSE OF ACTION COMPARISON.....	5-1
1. Evaluation Criteria.....	5-1
2. List Advantages and Disadvantages of Each COA.....	5-2
3. Compare the Merits of COAs.....	5-4
 STEP 6: COURSE OF ACTION APPROVAL.....	 6-1
1. COA Decision.....	6-1
2. Joint Synchronization Matrix.....	6-1
3. Concept of Operations.....	6-2
 STEP 7: PLAN OR ORDER DEVELOPMENT.....	 7-1
1. Characteristics.....	7-1
2. Format of Military Plans and Orders.....	7-1
3. Commander Approval of the Plan/Order.....	7-2
 APPENDIX A: JIPOE Products.....	 A-1
APPENDIX B: Deliberate Planning and the JOPP.....	B-1
APPENDIX C: Center of Gravity Determination.....	C-1
APPENDIX D: Design.....	D-1
APPENDIX E: Risk Assessment and Mitigation.....	E-1
APPENDIX F: Staff Estimates.....	F-1
ANNEX 1: Generic Staff Estimate.....	F-1-1
ANNEX 2: Intelligence Estimate.....	F-2-1
ANNEX 3: Logistics Estimate.....	F-3-1
ANNEX 4: Information Operations Estimate.....	F-4-1
ANNEX 5: Civil-Military Estimate.....	F-5-1
ANNEX 6: Commanders Estimate.....	F-6-1
ANNEX 7: Estimate of Supportability.....	F-7-1
APPENDIX G: Sample Decision Matrix.....	G-1
APPENDIX H: Joint Synchronization Matrix.....	H-1
APPENDIX I: Plan Rehearsals.....	I-1
APPENDIX J: Command Relationships.....	J-1
APPENDIX K: Global Force Management.....	K-1
APPENDIX L: Operational Time Definitions.....	L-1
APPENDIX M: Classes of Supply.....	M-1
APPENDIX N: Operational Assessment.....	N-1
APPENDIX O: Glossary.....	O-1
APPENDIX P: Abbreviations and Acronyms.....	P-1

THE JOINT OPERATION PLANNING PROCESS (JOPP)

Military commanders are required to make decisions constantly. Every day, they and their staffs resolve simple, routine, and/or complex problems. To help them think through their options when faced with a force employment decision while applying their knowledge, experience and judgment, military staffs use a methodology called the Joint Operation Planning Process (JOPP).

Developing plans is a continuing function of all commanders and staff officers. In reality, all officers involved in military operations are continually revising their original staff estimates and planning in the light of current developments. The planning process is an ongoing activity, which begins upon receipt of guidance and ends at the conclusion of operations. An entirely new plan and supporting estimates are normally not prepared except when a new operation is undertaken or when a drastic change in the situation renders such action necessary.

The process is supported by staff section specific estimates. Most of the staff divisions (e.g., J-1, J-2, J-3, etc., or Service counterparts) prepare their own estimates in support of the JOPP. Pertinent parts of these staff estimates are then inserted, verbatim or in modified form, into the final product. See https://jdeis.js.mil/jdeis/jel/jtfguide/jtf_index.htm, *Joint Task Force Headquarters Training Guide* for a good review of the content found in each of the staff estimates (See Appendix F for examples of Staff Estimates).

JOPP underpins planning at all levels and for missions across the full range of military operations. It applies to both supported and supporting joint force commanders (JFCs) and to joint force component commands when the components participate in joint planning. This process is designed to facilitate interaction between and among the commander, staff, and subordinate headquarters throughout planning. JOPP helps commanders and their staffs organize their planning activities, share a common understanding of the mission and commander's intent, and develop effective plans and orders.

This planning process applies to deliberate planning (see Appendix B) and crisis action planning (CAP) within the context of the responsibilities specified by the Chairman of the Joint Chiefs of Staff manual (CJCSM) 3130 series *Adaptive Planning and Execution (APEX) system*.¹ The JOPP is also used by joint organizations that have no specific APEX responsibilities. Furthermore, JOPP supports planning throughout the course of an operation after the Chairman of the Joint Chiefs of Staff (CJCS), at the direction of the President or Secretary of Defense (SecDef), issues the execute order (EXORD). In common application, JOPP proceeds according to planning milestones and other requirements established by commanders at various levels. However, the CJCSM 3130 series specifies joint planning and execution community (JPEC) milestones, deliverables, and interaction points for contingency and crisis action plans developed per the formal JOPES process. Figure 1 shows the primary steps of JOPP.

¹ APEX is replacing the Joint Operation Planning and Execution System (JOPES). JOPES uses the CJCSM 3122 series of publications which will be retired as the new APEX volumes are published. APEX will use the CJCSM 3130 series of manuals.

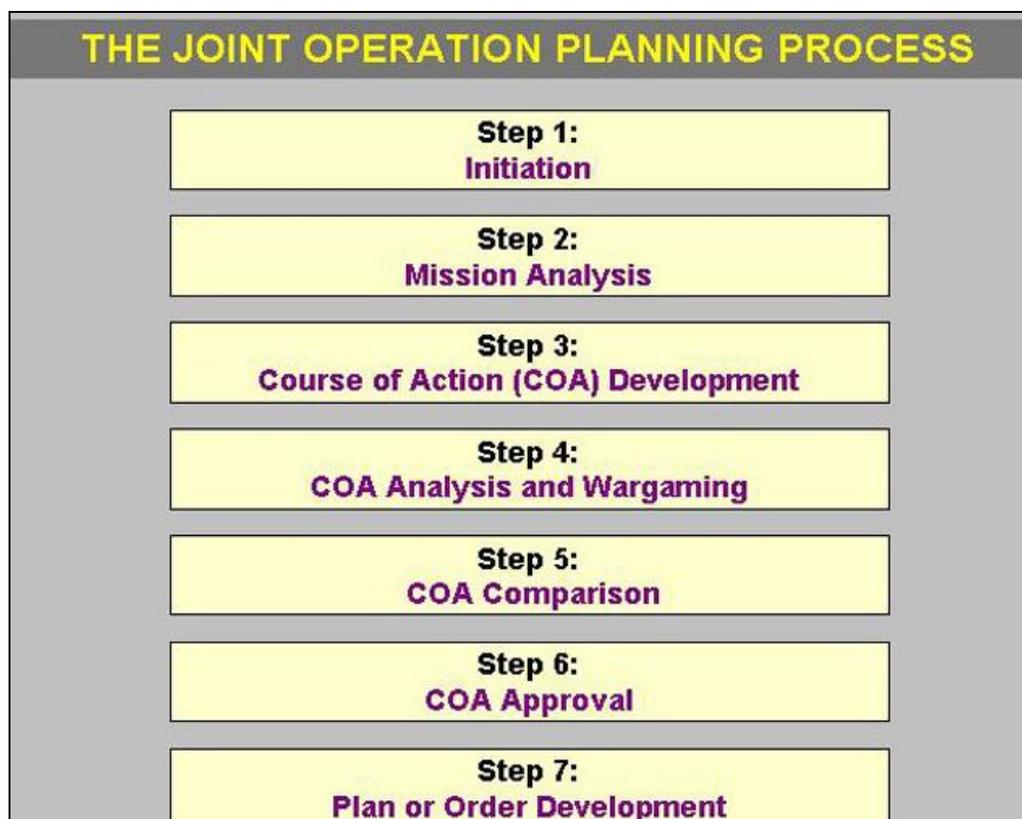


Figure 1. The Joint Operation Planning Process (JOPP) per JP 5-0

The JOPP and the NPP

Planning conducted by another Service may differ in format and detail from the JOPP, but all address similar planning issues. The Navy Planning Process (NPP), as detailed in NWP 5-01 *Navy Planning*, provides maritime planners with the procedures requisite for high tactical / low operational planning requirements (see Figure 2). While the NPP accomplishes the same planning actions as outlined in the JOPP, it does so in six steps that in some cases combine the processes found in the Joint Publication 5-0 *Joint Operation Planning* (such as Mission Analysis and Initiation as well as COA Comparison and Approval), and in other cases add activities (such as Transition). It should also be noted that while the Joint Intelligence Preparation of the Operational Environment (JIPOE) is in fact a product of

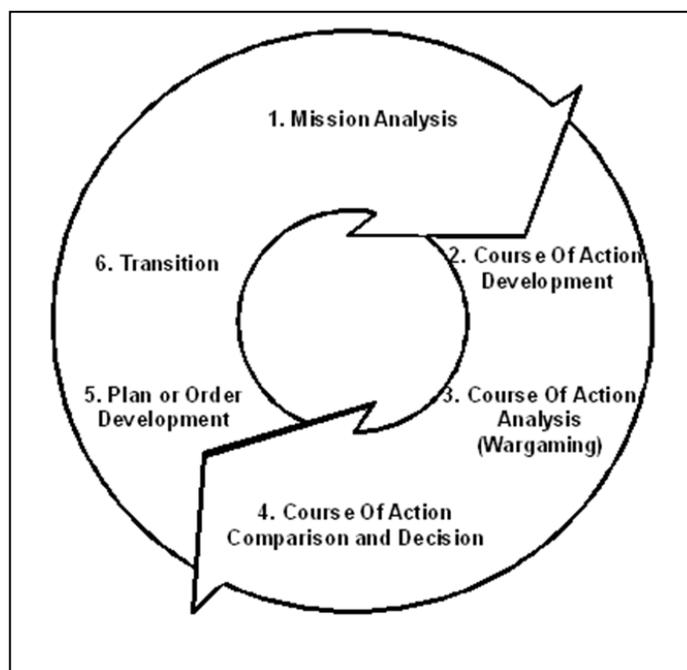


Figure 2. The Navy Planning Process (NPP) per NWP 5-01

a staff estimate and not a planning step, its importance to the overall planning process is so critical that this workbook highlights its presence. This workbook uses the JOPP steps for explaining the joint planning process and, unlike the maritime tactical focus of NWP 5-01, this document retains a focus at the *operational level of war*, which is inherently *joint* in nature. As such, for the remainder of this workbook the term JOPP will be used rather than NPP to reflect the higher order planning requirements demanded by a joint environment and reflected in this workbook's procedures and examples.

Summary of JOPP Planning Steps

In practice, these steps take place sequentially, but they may be compressed depending on available planning time, staff experience/capabilities, and the commander's involvement in the process. Additionally, subordinate and superior commands will be conducting their own parallel planning that requires inputs from your command's process. In other words, no planning is done in isolation. These steps are described and analyzed here sequentially for instructional purposes only.

Step One. Initiation:

As the first step of the process its purpose is to review and analyze orders, guidance, intelligence, and other information in order for the commander, planning team, and staff to gain an understanding of the situation and for the commander to produce initial planning guidance for the planning team. Bottom line, this step sets the conditions for the subsequent JOPP steps. In *Crisis Action Planning* (CAP), a CJCS Warning Order (WARORD) often initiates planning. In addition, the command may have completed earlier design methodologies in anticipation of the planning event (See Appendix D). In *Deliberate Planning*, there are a range of strategic documents (see Appendix B) which both initiate planning as well as inform the process.

While not a formal step in the JOPP, though essential to the joint planning staff's success, the JIPOE is a product of the Intelligence Staff Estimate. The most important portions of this estimate are the identification of the adversary's objectives and respective Center(s) of Gravity (COG) and the adversary's most likely and dangerous courses of action. The Intelligence staff will need to have an initial JIPOE product in order to support the following steps.²

Step Two. Mission Analysis:

Mission analysis drives the JOPP. Its purpose is to review and analyze orders, guidance, intelligence, and other information in order for the commander, planning team, and staff to gain an understanding of the situation and to produce a restated mission statement for the commander's approval. The various staff elements will initiate their respective staff estimates (See Appendix F for examples) to support the joint planning group's planning, development

² If design methodologies have been used by the staff prior to the JOPP, the bulk of the JIPOE may be rolled into the design products (see Appendix D).

of the plan or order, and to assist in the assessment of operations upon execution of the operation.

Step Three. Course of Action (COA) Development:

Planners use the mission statement, commander's intent, and planning guidance to develop multiple COAs. Then they examine each prospective COA for validity by ensuring adequacy, feasibility, acceptability, distinguishability, and completeness with respect to the current and anticipated situation, the mission, and the commander's intent.

Step Four. Course of Action Analysis and Wargaming:

Course of action analysis involves a detailed assessment of each COA as it pertains to the adversary and the operational environment. Each friendly COA is wargamed against selected adversary COAs. This step assists planners in identifying strengths, weaknesses, and associated risks, and in assessing shortfalls for each prospective friendly COA. Wargaming also identifies branches and potential sequels that may require additional planning. Short of execution, COA wargaming provides the most reliable basis for understanding and improving each COA. This step also allows the staff to refine its initial estimates based on additional understanding that is gained from the analysis.

Step Five. Course of Action Comparison:

All retained friendly COAs are evaluated against established criteria and against each other, ultimately leading to a staff recommendation and the commander's decision.

Step Six. COA Approval:

The JPG recommends a COA for the commander's approval. The commander selects his preferred COA and provides any additional guidance required for the staff to consider as it converts the selected COA into a Concept of Operations.

Step Seven. Plan and Order Development:

The staff uses the commander's COA decision, mission statement, commander's intent, and guidance to develop plans and/or orders that direct subordinate actions. Plans and orders serve as the principal means by which the commander expresses his decision, intent, and guidance. Part of this step also includes transition.

Transition is the orderly handover of a plan or order to those tasked with execution of the operation. It provides staffs with the situational awareness and rationale for key decisions necessary to ensure that there is a coherent transition from planning to execution. The process, however, does not end here—it is continuous. Staffs maintain running estimates that allow for plans and orders refinement. The planning staff continues to examine branches and sequels to plans and orders.

Figure 3 offers a brief summary of the major activities and associated products found in each of the JOPP steps.

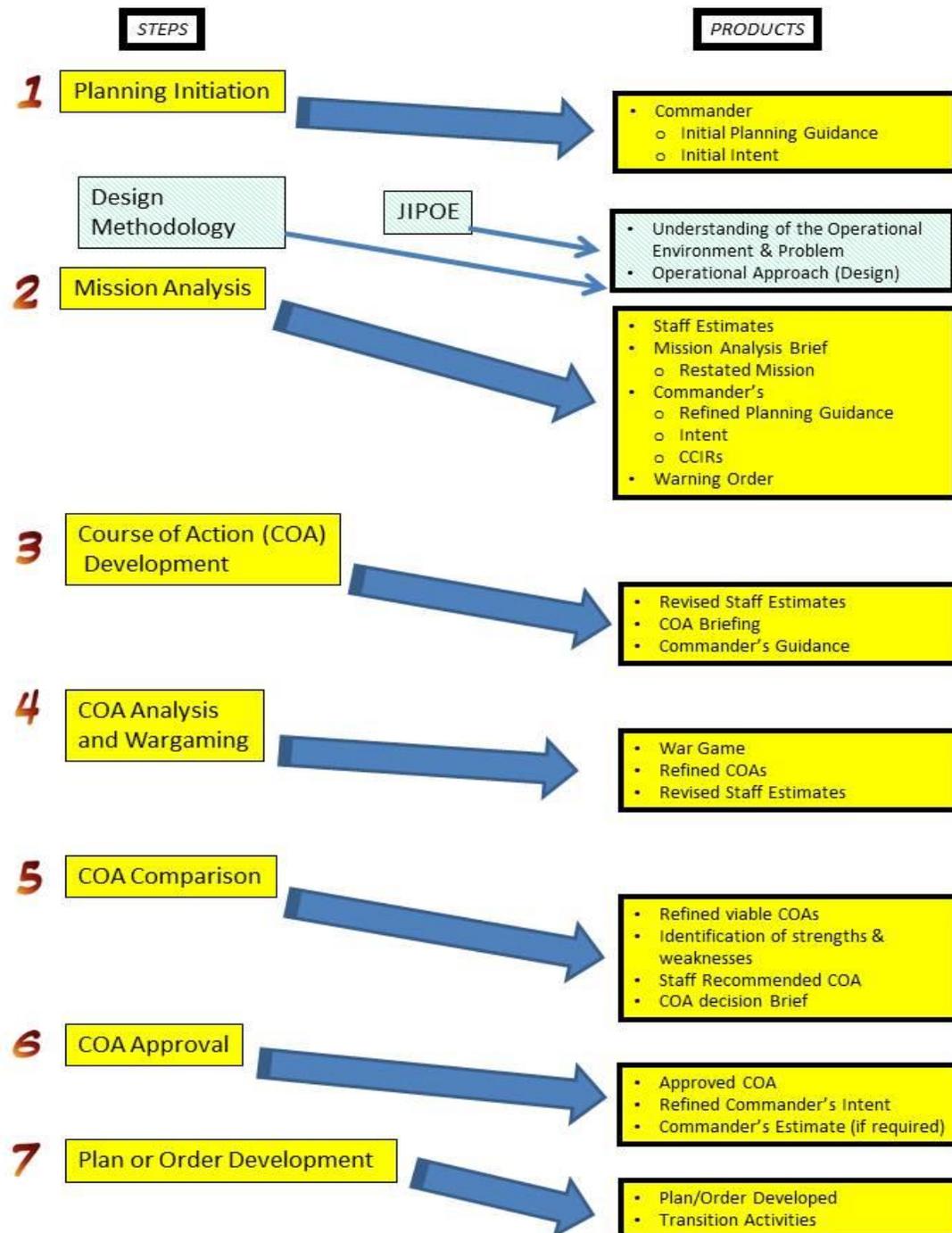


Figure 3. JOPP Major Activities and Products

STEP 1: PLANNING INITIATION

Planning is initiated upon recognition of the need for a military response to a given concern. In the case of **deliberate planning**, the *Guidance for the Employment of the Force* (GEF) and *Joint Strategic Capabilities Plan* (JSCP), along with other strategic guidance, can initiate planning (See Appendix B). Any commander, however, can initiate prudent planning if he assesses the need for the command to develop an approach to an emerging concern. In **crisis action planning**, while the GEF, JSCP, and the Combatant Commander's Theater Campaign Plan may prove useful, a CJCS Warning Order (WARNORD) or other planning directive will often initiate planning.

Since this step informs numerous staff and subordinate unit planning activities, it is important that the commander and his staff carefully consider the operational direction which initiated the planning. When planning for crises, the commander and staff will perform an assessment of the initiating directive to determine time available until mission execution, the current status of intelligence products and staff estimates, and other factors relevant to the specific planning situation. The commander typically will provide initial planning guidance, 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 provide his current understanding of the operational environment (OE), the problem, and operational approach for the campaign or operation.

Two processes which can inform a commander and his staff's understanding are the Joint Intelligence Preparation of the Operational Environment (JIPOE) and the use of "design" methodologies.³ JIPOE is described on the next page, while a detailed discussion on design can be found at Appendix D, Design.

NOTE: This workbook is written to reflect an approach for using the JOPP during **Crisis Action Planning** (CAP). Appendix B offers modifications to this process when conducting **Deliberate Planning**. While the steps of the JOPP are identical, the nature of the two planning requirements differs sufficiently that some of the methodologies used during the JOPP will vary.

³ This workbook uses the NWP 5-01, *Navy Planning Process* (NPP) term "design" to express the same meaning as the Joint Pub 5-0, *Joint Operation Planning* JOPP usage of "operational design." Operational design in joint usage, imposes design methodology into operational art and onto the Mission Analysis step of the joint operation planning process in support of developing campaigns or major operations. The NPP views design as an optional methodology that may be used in concert with operational art prior to and in conjunction with Mission Analysis in order to assist the commander and staff when faced with an unfamiliar and /or complex and ill-structured situation.

JOINT INTELLIGENCE PREPARATION OF THE OPERATIONAL ENVIRONMENT



THE PURPOSE OF THE JIPOE PORTION OF THIS PLANNER'S WORKBOOK IS NOT TO MAKE THE USER A JIPOE EXPERT. THE INTENT IS TO EXPOSE THE NON-INTELLIGENCE STAFF OFFICER/PLANNER TO A CRITICAL ASPECT OF THE PLANNING PROCESS, WHICH IS ON-GOING THROUGHOUT THE PLANNING AND EXECUTION OF AN OPERATION. ALL PLANNERS NEED A BASIC FAMILIARITY OF THE JIPOE PROCESS IN ORDER TO BECOME CRITICAL CONSUMERS OF THE PRODUCTS PRODUCED BY THE J-2/G-2/N-2/A-2. THE JIPOE SERVES AN INTEGRAL **SUPPORTING** ROLE TO THE OVERALL PLANNING PROCESS. SOME OF THE STEPS IN THE JIPOE ARE CONDUCTED IN PARALLEL WITH THE MISSION ANALYSIS AND WILL REQUIRE INPUT FROM OTHER MEMBERS OF THE JOINT PLANNING TEAM. **SEE APPENDIX A FOR GREATER JIPOE DETAILS AND JOINT PRODUCT EXAMPLES.**



Joint Intelligence Preparation of the Operational Environment (JIPOE) is the analytical process to produce intelligence assessments, estimates, and other intelligence products. The primary purpose of JIPOE is to support the joint force commander's (JFC's) decision-making and planning by identifying, assessing, and estimating the adversary's center(s) of gravity (COG)(s), critical factors, capabilities, limitations, intentions, and courses of action (COAs) that are most likely to be encountered based on the situation. Using the JIPOE process, the joint force intelligence directorate (J-2) manages the analysis and development of products that provide a systems understanding of the increasingly complex and interconnected *operational environment*—the composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander.

Although JIPOE support to decision-making is both dynamic and continuous, it must also be “front loaded” in the sense that the majority of analysis must be completed early enough to be factored into the commander's decision-making effort. JIPOE generally occurs in parallel to mission analysis, and supports mission analysis by enabling the commander and staff to visualize the full extent of the operational environment, to distinguish the known from the unknown, and to establish working assumptions regarding how adversary and friendly forces will interact within the operational environment. JIPOE also assists commanders in formulating their planning guidance by identifying significant adversary capabilities and by pointing out critical operational environment factors, such as weather and terrain; the locations of key geography; environmental and health hazards; attitudes of indigenous populations; and potential land, air, and sea avenues of approach. Of growing significance in JIPOE are considerations in the information environment, which are not limited to an adversary and will have ramifications across all phases of a planned military operation. As planning continues, analysts refine their assessment of the adversary's centers of gravity (COGs), potential adversary courses of action (adversary COAs), and other factors.

The operational environment encompasses the air, land, sea, space, the information environment, and associated adversary, friendly, and neutral systems (political, military, economic, social, informational, infrastructure, legal, and others), which are relevant to a specific joint operation. Understanding this environment has always included a perspective broader than just the adversary's military forces and other combat capabilities within the traditional operational environment. However, current and future strategic and operational requirements and types of operations can benefit by a more comprehensive view of all systems in this environment relevant to the mission and operation at hand.

In order for the joint force staff to identify potential COAs, the Joint Force Commander (JFC) must formulate planning guidance based on an analysis of the friendly mission. This analysis helps to identify specified, implied, and essential tasks; possible branches and sequels; and any limitations on the application of military force. JIPOE supports Mission Analysis by enabling the commander and staff to visualize the full extent of the operational environment, to distinguish the known from the unknown, and to establish working assumptions regarding how adversary and friendly forces will interact within the limitations of the operational environment. JIPOE also assists commanders in formulating their planning guidance by identifying significant adversary capabilities and by pointing out critical operational environment factors, such as the locations of key geography, attitudes of indigenous populations, and potential land, air, sea, and informational avenues of approach. MA and the commander's planning guidance form the basis for the subsequent development of friendly COAs by the staff.

JIPOE is a continuous process, which enables JFCs and their staffs to visualize the full spectrum of adversary capabilities and limitations as well as potential Adversary Courses of Action (adversary COAs) across all dimensions of the operational environment. While JIPOE is most often seen as part of the joint planning process, it is actually conducted both prior to and during operations. Just as the commander must continually make decisions about the course of a campaign or operation, the intelligence staff must constantly work to seek out, analyze, and disseminate new information to support those decisions. Although the specifics of the process vary depending on the situation and force involved, there is general agreement on the four major steps of JIPOE.

I. DEFINE THE OPERATIONAL ENVIRONMENT.

This first step is an initial survey of the geographic and non-geographic dimensions of the operational environment. It is used to bound the problem and to identify areas for further analysis. There are generally three tasks that must be accomplished.

1. Identify the Area of Operations and the Area of Interest. Much of the information may be provided in the superior's order or OPLAN, but usually this step requires coordination with the J-5, J-3, or other elements of the staff. If a Joint Operations Area (JOA) or other operational areas have been identified, they will help guide the intelligence requirements and collection plan. The operations area, or **Area of Operations (AO)**, is generally the area of direct concern to the commander and intelligence will be focused on this area. The **Area of Interest (AOI)** is usually a larger area, including areas that may

influence the operation, but might not be under direct operational control of the commander. Intelligence activities will also be focused on this area, but not necessarily to the same degree as on the AO. The AO and AOI may differ for each dimension of warfare—land, maritime, air, space, and cyberspace – and may need to be adjusted later in the planning process (e.g., if additional threats are identified outside the defined areas which may impact upon the commander’s AO).

(Joint) Area of Operations:

(Recommend this be displayed on a map/chart for clarity and reference)

Area of Interest:

2. Determine the Significant Characteristics of the Operational Environment. This sub-step is an *initial review* of the factors of **space, time, and forces** and their **interaction** with one another. Examining these factors in general terms early in the process will help initiate intelligence collection and other activities that will support the later steps of the planning process. This review will require information on friendly forces and how the factors of space and time affect them. For this reason, the J-2 staff must work closely with the J-5, J-3, and other staff members throughout the process.

3. Evaluate Existing Data Bases and Identify Intelligence Gaps and Priorities. In this sub-step, intelligence personnel review the information found in various automated databases, Intelink sites (the classified version of the internet), and other intelligence sources, both classified and unclassified. The staff begins to coordinate with local, theater, and national intelligence organizations that may provide support to the operation, and initiates new intelligence collection and production requests as necessary. Intelligence requests and requirements may take the form of:

- **Priority Intelligence Requirements (PIRs).** These are the *commander's* intelligence priorities for the operation that will drive all intelligence activities used in support of Commander's Critical Information Requirements (CCIRs) to be discussed later. The J-2 staff will normally develop and propose PIRs for the commander's approval.
- **Requests for Information (RFIs).** This is a *general term* that may be used by operations or other personnel who need timely information from the intelligence staff or an intelligence organization concerning an aspect of the operation. If the information is readily available, such as through the Joint Intelligence Center (JIC), the RFI will be answered directly. If the answer will require additional analytical work, a *production request* may be necessary.
- **Production Requests (PRs).** These are used to request the development of new studies, reports, and other intelligence products. For example, if the initial review of available intelligence revealed that little information existed on the adversary's information operations capability, a PR might be sent by the J-2 staff to the theater JIC, requesting that this information be provided by a certain date. If the information to answer such a request does not currently exist in the intelligence community, a *collection requirement* may be placed.
- **Collection Requirements (CRs).** These may take many forms, depending on the information needed and the collection assets available to get it. For example, some information may be available through the tasking of a theater intelligence collector such as U-2 aircraft. The J-2 staff collection managers process these requirements and it is their job to determine where and how to best get the necessary intelligence.

This step is only a preliminary review of the intelligence available; the J-2 staff will continue to levy intelligence requirements throughout the JIPOE process and, in fact, throughout the entire course of the operation.

II. DESCRIBE OPERATIONAL ENVIRONMENT EFFECTS.

The purpose of this step is to determine how the operational environment affects both friendly and adversary operations. It begins with an identification and analysis of all militarily significant environmental characteristics of each operational environment dimension. These factors are then analyzed to determine their effects on the capabilities and broad COAs of both adversary and friendly forces. *Some parts of this step may not be a J-2 responsibility.* For example, in some commands weather and topography may not be specifically J-2 functions. The J-2 staff will, however, take the lead in coordinating these efforts.

1. Analyze the Factor of Space of the Operational Environment. This step involves an in-depth analysis of the factor space. Generally, only those characteristics of the AO should be considered which affect the preparation, planning, and employment of the adversary or friendly forces and assets. The scope and extent of this analysis at each level of war differs considerably. For example, the tactical commander is rarely concerned with the

economic, political, and technological aspects of the situation, whereas the theater of operations and theater of war combatant commanders are concerned with these aspects. Moreover, weather is normally of greater concern for the tactical commander, while the climate receives greater attention at the operational and theater-strategic level. This does not mean, however, that the weather is not taken into account in determining the time and place of attack by the operational commanders, especially in planning and executing an amphibious landing. The focus in this step is to describe briefly the most important features of the situation and their effect on adversary capabilities and in the development of friendly COAs for all of the operational environment dimensions (land, maritime, air, space, electromagnetic, cyberspace, and human factors). While all of the aspects of a given element are fully considered, only those aspects that have an impact on the tactical, operational, or strategic mission are highlighted.

The *land dimension* is determined through terrain analysis. Terrain analysis consists of an evaluation of the military aspects of the battlefield's terrain to determine its effects on military operations, both friendly and adversary. The most important military aspects of terrain are: Observation and fields of fire; Cover and concealment; Obstacles; Key terrain; and Avenues of approach (**OCOKA**).

The *maritime dimension* pertains to key military aspects of the maritime environment. These include maneuver space and chokepoints; harbors and anchorages; ports, airfields, and naval bases; shipping routes; and the hydrographic and topographic characteristics of the ocean floor and the littoral land mass.

The *air dimension* involves an analysis of all factors of the operational environment that may affect friendly and adversary air operations. Adversary infrastructure that supports either offensive air operations or defense against air attacks should be analyzed. This step will require analysts to consider not only terrain and weather, but aspects such as airspace issues as well.

The *space, electromagnetic, cyberspace dimensions, and human factors* analysis will vary greatly depending on the nature of the threat, the level of command involved, and the time available for planning. Specialized support may be required, such as from elements from the U.S. Strategic Command or the electronic warfare and information operations communities. The J-2 staff will need to coordinate with other staff elements that are involved with these areas.

The items listed below are applicable to the entire range of military operations, from SSTR to war. Therefore, describe and analyze only those aspects of the factors of space, time, and forces that are applicable to the mission of the friendly forces.

a. Military geography: The physical environment includes many parameters that affect the combat capabilities and execution of actions of friendly forces and assets (see Figure 1-1). In describing these features the commander and staff should be aware that there are generally accepted descriptions of related conditions as defined by the Universal Joint Task List (UJTL).

(1) *Area*: total area (in sq. miles/kilometers) in which the planned operation is to take place; length and width of the area (in miles/kilometers); geographical boundaries (land, maritime, river, lakes).

(2) *Position*: Land or maritime position; insular, peninsular position; exterior or central position, and so forth.

(3) *Distances*: Distances from home bases to the area of combat employment; distances between base of operations to the concentration or assembly area; distances between various physical objectives, and so forth.

(4) *Land Use*: The main characteristics of the land use (arable land; permanent crops, irrigated land, etc.).

(5) *Environment*: Provide an overview of the environmental issues that potentially can affect the employment of military forces on both sides (pollution—air, water, land; natural hazards; destructive earthquakes, volcanoes, etc.).

Land

Terrain Slope

Steep (>10%); Moderate (3 to 10%); Little (<3%)

Vegetation

Jungle (rain forest, canopied); Dense (forested); Light (meadow, plain); Sparse (alpine, semi-desert); Negligible (arctic, desert)

Sea

Ocean Depth

Shallow (<100 fathoms); Limited (100 to 500 fathoms); Deep (500 to 2500 fathoms); Very Deep (>2500 fathoms)

Harbor Depth

Deep (>60 ft); Moderate (30 to 60 ft); Shallow (<30 ft)

Air

Air Temp

Hot (>85°F); Temperate (40° to 85°F); Cold (10° to 39°F); Very Cold (<10°F)

Visibility

WOXOF (<1/4 NM); Low (1/4 to 1 NM); Moderate (1 to 3 NM); Good (3 to 10 NM); High (10 to 20 NM); Unlimited (>20 NM)

Figure 1-1. Examples of Conditions of the Physical Environment

(6) *Topography*: Provide the main features of relief (flat, mountainous, swampy, desert, etc.) and the affect the topography has on the movement and employment of military forces on both sides.

(7) *Vegetation*: The main characteristics of vegetation in the area (barren, woodland, meadows and pastures, hedgerow, rice paddies, etc.) and its affect on the movement and employment of military forces on both sides.

(8) *Hydrography/Oceanography*: Characteristics of sea/ocean areas (size of the area; coastal indentation, coasts and offshore islands/islets; archipelagoes, deltas, straits, narrows, bottom's topography; water depths, salinity, bioluminescence, currents, tides, etc.), and rivers/estuaries, streams, lakes, and artificial inland waterways (canals, lakes, etc.).

(9) *Climate/Weather*: The main features of the climate (temperate, cold, arctic, tropic, subtropics); change of seasons; thaw; duration of the day (sunrise, sunset, twilight, etc. and their general affects on the preparation execution of the forthcoming military action); cloud cover, low ceiling/visibility, fog, precipitation (rainfall, snow, etc.); winds, waves (high seas—sea state 5 and higher), surf height; temperatures (sea, air, mean and extreme temperatures, etc.), humidity and its affect on the use of weapons/equipment and fatigue of personnel; thermal crossover and transmissivity; precipitation (rainfall, snow, etc.) and its affect on off-road trafficability; sea ice, icebergs, currents, tides, and so forth.

b. Demography: Provide the analysis of the main aspects of the demographic situation; total population; age structure; racial composition; regional distribution; urban vs. rural population; average density (per sq. mile/km); net migration rate; growth rate; life expectancy at birth; total fertility rate; degree of urbanization; birth rate; mortality rate; infant mortality rate; health and medical, and so forth.

(1) *Ethnicity*: Ethnic composition; national groups and national minorities; ethnic problems or conflicts; tribal structure and so forth.

(2) *Religion*: Main religions; relations with the state; religious holidays; religious differences or problems; and so forth.

(3) *Languages*: Dominant languages; dialects; languages of the ethnic minorities; alphabet used; and so forth.

(4) *Literacy*: Provide general overview; illiteracy of adults; illiteracy among urban and rural population; and so forth.

c. Politics: The main characteristics of the political system (system of government; executive, judiciary, legislature, etc.); form of government; administrative divisions; legal system; constitutional system and constitutional issues; ruling regime; political parties and leaders; other political or pressure groups; trade unions; human rights; political stability; internal threats (political extremism, terrorism, insurgency, serious crime/drugs, etc.) external threats (border disputes, resource disputes, etc.).

d. Diplomacy: The main characteristics of the country's diplomatic position; relations with foreign countries; alliances/coalitions; bilateral agreements; diplomatic representation; international law issues/problems (maritime claims, neutrality declarations, etc.).

e. Natural Resources: Minerals (iron, zinc, lead, copper, silver, graphite, uranium, etc.); energy resources (thermal—coal, lignite, oil, natural gas, hydroelectric, wind, etc.); water supply, food supply, and so forth.

f. Economy: Key characteristics of economic system; economic policy; economic performance; national product (GNP); real growth of GDP; total budget; budget deficit; inflation rate; currency; debts (external, internal, etc.); external debt servicing payments; foreign investment; foreign aid; aid donors; finance (banking, insurance, etc.); domestic trade; land and maritime trade (coastal, regional, ocean-going, etc.); foreign trade; trade deficit; trading partners; heavy industry (mining, metallurgy, machine building, etc.); defense industry; military R&D; covert programs; production of weapons of mass destruction (nuclear, biological, chemical); aerospace industries; shipbuilding; ship repair facilities; light industry (consumer goods; chemicals and related products; pharmaceutical industry; food, beverages, tobacco; textile and clothing; wood and paper products; apparel, leather, footwear; etc.) petroleum products; electronics; electricity (by source—thermal, hydroelectric, nuclear, wind, solar; capacity, production, consumption); fisheries; tourism (domestic, foreign, etc.); work force by sectors (agriculture, industry, forestry, banking, education, culture, administration and justice; welfare and education, etc.); migrant workers; unemployment; income per capita; living standards; nutrition level, and so forth.

g. Agriculture: The main characteristics of agricultural production; cereal production; fodder crops; beef and dairy production; livestock production (sheep, cattle, etc.); produce; fruits, and so forth.

h. Transportation: General characteristics of the transportation system (domestic, links with other countries in the region or out of the area); land transportation—roads (paved, unpaved—gravel, earth, etc.); railroads (standard gauge, narrow gauge; electrified; industrial, etc.), inland waterways (rivers, lakes, canals, etc.); maritime transport—merchant marine (merchant vessels by type—passenger ships, ferries; crude oil tankers, liquefied natural gas (LNG) tankers; container ships freighter; bulk-carriers; size, age, speed, etc.); shipping companies; ports; port terminals—oil, container, freight, etc., air transport—civil aviation; air carriers—domestic and international service; business aviation; agricultural aviation; airports (paved or unpaved runways; runway weight bearing capacity; maximum on ground (MOG) capacity; runways by length—>3,600 m 2,400-3,659 m; 1,220-2,439 m; <1,220 m), and so forth.

i. Telecommunications: Wire services, commercial satellite, radio (FM/AM, short-wave), cable, land line, fiber optical lines and other communications facilities in the area of operations that might enhance Command and Control (C2) of military forces.

j. Culture: Describe and analyze the main cultural traits; cultural biases and prejudices; sensitivities; prevalent view of other national groups, races, or nations; cultural differences among various ethnic groups; and so forth.

k. Ideology: Describe and analyze the key characteristics of the political ideology; strengths and weaknesses; vulnerabilities; and so forth.

l. Nationalism: Describe briefly and analyze the key aspects of the nationalism (country or political parties/groups, etc.); nationalistic feelings; strengths and weaknesses/vulnerabilities; and so forth.

m. Sociology: Social conditions run a wide range from the psychological ability of a population to withstand the rigors of war, to the health and sanitation conditions in the area of operations. Language, social institutions and attitudes, and similar factors that may affect selection of a course of action should be considered.

n. Science and Technology: Although little immediate military impact may result from the state of science and technology in a target area, the long-range effects of such factors as the technical skill level of the population and scientific and technical resources in manpower and facilities should be considered in cases where they may affect the choice of a COA.

Summarize the Key Elements of the Factor of Space:

2. Analyze the Factor of Time of the Operational Environment. This part of the analysis should analyze the factor of time in generic terms and how it affects the mission accomplishment on both sides.

a. Preparation Time: Estimate the time required to prepare for war or for the forthcoming military action based on the doctrinal tenets or empirical data.

b. Duration of the Adversary Action: Estimate the time of the expected or pending adversary tactical action, major operation, or campaign.

c. Warning Time: Estimate the warning time for the forthcoming military action for both friendly and adversary forces (based on the existing reconnaissance, intelligence and early warning capabilities).

d. Decision Cycle: Estimate the time required for both sides to make a decision—the time from receipt of the mission to the selection of the optimal COA.

e. Planning Time: Estimate the time required for both sides to issue a directive—the time from the selection of a COA to the issuance of a directive.

f. Time for Mobilization: Estimate the time required for both sides to mobilize ready reserves or complete partial or total mobilization.

g. Reaction Time: Estimate the time for both sides (based on doctrinal tenets or empirical data) to *effectively* react to the adversary's move or action.

h. Time Required for Deployment: Estimate the time both sides require to prepare and move forces from their home stations to the ports or airfields of embarkation.

i. Deployment Transit Time: Estimate the time required to move forces by land, sea, and air from major base or staging/deployment areas into the theater or area of operations; compute distances and transit times for each friendly unit/force, and adversary unit/force.

j. Time for Concentration: Estimate the time both sides require to move and concentrate forces within the operational environment.

k. Time to Prepare and Complete Maneuver: Estimate the time necessary for both sides to prepare, execute, and complete their maneuvering (tactical or operational).

l. Time to Accomplish the Mission: Estimate the time both sides require to accomplish the entire combat mission.

m. Rate of Advance (or Delay): Estimate potential rates of advance (in an offensive) or rate of delaying action (in a defensive) for both sides (applicable only in land warfare).

n. Time for Bringing up Reinforcements: Estimate the time required by both sides to move and employ effectively reinforcements.

o. Time to Commit Reserves: Estimate the time required by both sides to commit effectively tactical or operational reserves.

p. Time to Regenerate Combat Power: Estimate the time both sides need to regenerate combat power (R&R for manpower; replenishment of POL, AMMO, food, water, etc.)

q. Time for Redeployment: Estimate the time both sides require to prepare and complete redeployment of forces to a new area/mission.

r. Time to Reconstitute Forces: Estimate the time required by both sides to reconstitute forces after the end of the hostilities; it encompasses regeneration of combat power and reorganization.

Summarize the Key Elements of the Factor of Time:

3. Assess the Time - Space Relationship. Any key time-space relationships should be identified and assessed with respect to their affect on both adversary and friendly COAs.

4. Determine the Operational Environment Effects on Adversary and Friendly Capabilities and Broad Courses of Action. The analysis that has been conducted in STEP 1 is combined into a single integrated product that focuses on the total environment’s effects on all COAs available to both friendly and adversary forces. The product may take the form of a briefing, set of overlays, intelligence estimate, or any other format the commander deems appropriate. **Regardless of the format, this product is designed to support the development and evaluation of friendly COAs** by providing the J-5/J-3 and commander with an evaluation and an analysis of the periods of optimal conditions for specific types of military operations.

Example of Operational Environment Effects on Adversary and Friendly COAs

<u>Item:</u> REDLAND is bounded on three sides by neutral nations, and water on the fourth side.	<u>Effect on adversary COAs</u> Adversary can minimize Force deployments on those neutral borders.	<u>Effect on friendly COAs</u> Friendly Lines of Operation will be predictable.
--	---	--

Summarize Key Influences of Time/Space on adversary COAs and Potential Friendly COAs:

SITUATION	EFFECT ON ADVERSARY COAs	EFFECT ON FRIENDLY COAs
Item:		

Item:		
Item:		
Item:		

Table 1-1. Influences of Time and Space on adversary COAs and Potential Friendly COAs

Charts or overlays that show the important aspects of terrain for all significant dimensions of military operations are the primary products that are developed during this sub-step. **The most important graphic is a Modified Combined Obstacle Overlay (MCOO)** that depicts critical information such as restricted areas, avenues of approach, likely engagement areas, and key terrain. Examples of a Land MCOO, Maritime MCOO, and Air MCOO are provided in Appendix A.

III. EVALUATE THE ADVERSARY (the Factor of Force).

The third step in the JIPOE process is to identify and evaluate the adversary's forces and its capabilities, limitations, doctrine, and tactics, techniques and procedures (TTP) likely to be employed. In this step, analysts develop models to portray how the adversary normally operates and identifies capabilities in terms of broad adversary COAs the adversary might take. Analysts must take care not to evaluate adversary doctrine and concepts by "mirror imaging" U.S. doctrine.

1. Identify Adversary Force Capabilities. At this point the intelligence staff will normally use basic intelligence data that has been produced by theater joint intelligence centers and other analytical organizations to analyze the adversary factor of force. The broader term "means" can be used when not only military forces, but also other sources of power (political, economic, etc.) of a nation or a group of states are brought to bear (see Appendix D for a brief discussion on the PMESII). This part of the estimate may provide a detailed analysis of the armed forces as a whole or as individual services or focus on the combat forces and combat support forces on both sides depending on the scale of the forthcoming military action and the command echelon.

a. Defense System: Provide an overview and analysis of the defense system; components of defense system (armed forces, police, para-military forces/groups; civil defense, etc.); national military organization; civilian control; civil-military relations; defense expenditures; security assistance; arms transfers; arms imports; foreign military aid; military relations with foreign countries; foreign military advisors; and so forth.

b. Armed Forces: Total strength; trained reserve; mobilized manpower; officer corps, NCOs, soldiers/seamen; Services (Army, Navy, Air Force and/or Air Defense, Marine Corps

or Naval Infantry, Coast Guard), etc. The following elements should be analyzed: overall numerical strength of forces on both sides; active forces vs. reserves; combat vs. noncombat forces; forces in combat vs. forces assigned for protection of the rear areas; types of forces and force mix; mobility (tactical or strategic); task organization; reconstitution ability; logistic support and supportability; combat readiness; transportation assets; and so forth.

c. Relative Combat Power of Opposing Forces: The *relative combat power* is derived by evaluating the strengths and weaknesses of friendly and adversary forces, their location and disposition, logistics, time and space factors, and combat efficiency (see Appendix B). Normally, the staff will identify relevant factors, tabulate the facts, and then draw conclusions. Comparisons are meaningful only if they reflect the forces that will directly oppose each other. Any strength or weakness factor must reflect directly or indirectly the ability or inability of a force to achieve its assigned objective.

- (1) **Composition of Forces:** This includes Order of Battle (OOB) of major adversary forces or formations; type and forces' mix; major weapons systems and equipment and their operational characteristics.
- (2) **Reserves:** Describe and analyze reserves (tactical, operational, or strategic) for the forthcoming action on both sides.
- (3) **Reinforcements:** Estimate friendly and adversary reinforcement capabilities that can affect the forthcoming action in the area under consideration. This study should include ground, naval, air, and space elements; Weapons of Mass Destruction (WMD); and an estimate of the relative capacity to move these forces into the area of operations or theater of operations.
- (4) **Location and Disposition:** This includes geographic location of adversary units; fire support elements; C2 facilities; air, naval, and missile forces; and other elements of combat power in, or deployable, to the area of operations or the given theater of operations.
- (5) **Relative Strengths:** List the number and size of adversary units committed and those available for reinforcement in the area. This should *not* be just a tabulation of numbers of aircraft, ships, missiles, or other weapons, *but rather an analysis of what strength the adversary commander can bring to bear in the area* in terms of ground (air, naval) units committed and reinforcing, aircraft sortie rates, missile delivery rates, unconventional, psychological, and other strengths the commander thinks may affect the ratio of forces in the employment area.

d. Logistics: Summarize such considerations as transportation, supply, maintenance, hospitalization and evacuation, labor, construction, type of lines of communications (LOCs), to include land, air, sea; and their position (exterior or interior); protection and degree of vulnerability to diverse types of threat, and other elements of logistical support and sustainment.

e. Combat Efficiency: Estimate friendly and adversary state of training, readiness, battle experience, physical condition, morale, leadership, motivation, doctrine, discipline, and whatever significant strengths or weaknesses may appear from the preceding paragraphs.

Summarize the Key Elements of the Factor of Forces (Adversary):

2. DRAW-D. At this point, the analyst begins to consider *general* adversary COAs and how the adversary might be expected to act under each of these general COAs. General COAs can be described using the acronym “DRAW-D,” which stands for **D**efend, **R**einforce, **A**ttack, **W**ithdraw, or **D**elay.

a. Doctrinal templates. Individual service templates are usually constructed that portray each of the adversary’s service or functional area employment patterns. For example, in addition to a ground template that illustrates the adversary’s typical land force organization for an offensive, separate templates are constructed for naval, air, space, and cyberspace assets, as appropriate. These templates may be combined into joint doctrinal templates for each of the broad COAs (DRAW-D) the adversary may employ. These templates (see Figure 1-2) are constructed by analyzing all available intelligence on the adversary’s doctrine and through an examination of the adversary's past operations and exercises.

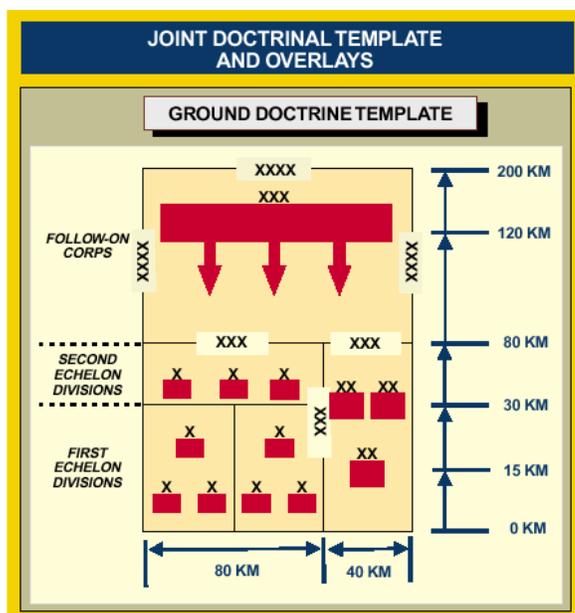
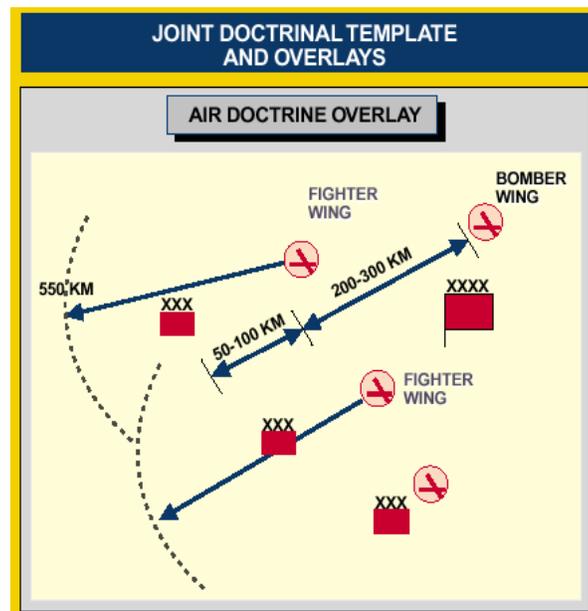
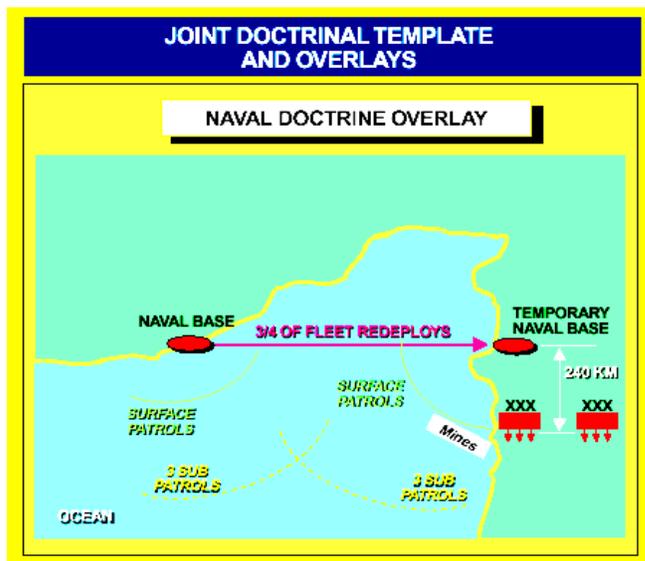


Figure 1-2. Examples of Doctrinal Templates (JP 2-01.3)

b. Description of adversary tactics.

In addition to a graphic depiction shown in the template, an adversary model should at a minimum include a written description of an adversary's preferred tactics. These descriptions should answer questions such as: does the adversary

typically initiate offensive operations at night; how does the adversary employ reserve forces; and how does weather affect the adversary's operations? Time event matrices may be used to show how the adversary might be expected to sequence and synchronize an operation over time.

c. Identification of High Value Targets (HVTs). The adversary model should include a list of HVTs—those assets *the adversary commander requires* for the successful completion of the missions that are depicted on the doctrinal templates. For example, an adversary ground force may be vulnerable to amphibious flanking attacks. In such a situation, the adversary's coastal defense assets, such as artillery and anti-ship cruise missiles, may be HVTs. This list of HVTs is developed in collaboration with the Joint Target Coordination Board (JTCB) or Joint Effects Coordination Board (JECB) and may be used later in the planning process to develop specific target sets.

3. Determine the current adversary situation (Situation Template). The intelligence staff uses all available sources, methods, and data bases to determine the adversary's current situation. This includes all significant elements of space, time, and forces addressed in previous steps. Adversary orders of battle, current force status and composition, and other factors are considered in maintaining a current situation plot, which is continuously updated throughout the planning process and the execution of the operation. See Appendix A for an example of a Situation Template.

4. Identify adversary capabilities. The intelligence staff is ready to determine what *broad* COAs the adversary is capable of taking that would allow him to achieve his objectives. Although the full analysis of the adversary's potential COAs will be done in the next JIPOE step, here the analysts may begin to refine the DRAW-D general COAs. For example, what kind of attack might the adversary conduct—an envelopment, penetration, or another kind? Are there nonconventional capabilities the adversary might use, such as WMD or information operations? One tool is to compare the current adversary situation with each of the adversary doctrinal templates already constructed. Based on this situation, what does the adversary doctrine suggest it may do? As an example, this analysis might lead to a capability statement such as the following: “The adversary has the capability to interdict friendly SLOCs at chokepoints GREY and BLUE after repositioning units of the southern fleet. Current naval deployments preclude an attack before 4 August.” The J-2 disseminates this evaluation of adversary capabilities to the other staff sections as soon as possible, typically as a written **intelligence estimate** that can support a wide range of further planning efforts. Depending on time available and the requirements of the JFC, however, the evaluation may be disseminated in a briefing or in other forms as desired.

IV. DETERMINE ADVERSARY COAs.

Accurate identification of adversary COAs requires the commander and his staff to think “as the adversary thinks.” From that perspective, it is necessary first to postulate possible adversary objectives and then visualize specific actions within the capabilities of adversary forces that can be directed at these objectives and their impact upon potential friendly operations. This visualization should *consider adversary actions two levels down*. From the adversary's perspective, appropriate physical objectives might include their own forces or their elements, forces being supported or protected, facilities or LOCs, and geographic areas or positions of tactical, operational or strategic importance.

The commander should not consider adversary COAs based solely on factual or supposed knowledge of the adversary intentions. The real COA by the adversary commander cannot be known with any confidence without knowing the adversary's mission and objective—and that information is rarely known. Even if such information were available, the adversary could change or feign his adversary COA. Therefore, considering all the options the adversary could physically carry out is more prudent. No adversary COA should be dismissed or overlooked because it is considered as unlikely or uncommon, only if impossible.

Potential adversary actions relating to specific physical objectives normally need to be combined to form *statements of adversary COAs*. These statements should be broad enough so that the fundamental choices available to the adversary commander are made clear. Once all adversary COAs have been identified, the commander should eliminate any duplication and combine them when appropriate.

To develop an adversary COA, one should ask the following three questions:

- *Can* the adversary do it?
- *Will* the adversary accomplish his objective?
- *Would it* materially affect the accomplishment of my mission?

The final step in the JIPOE process is designed to produce, **at a minimum**, two adversary COAs: the adversary's most likely COA and the most dangerous COA. This gives the commander a "best estimate" and "worst case" scenario for planning. However, if time allows, other adversary COAs are also developed. Each adversary COA usually includes a description of expected adversary activities, the associated time and phase lines expected in executing the COA, expected force dispositions, associated Centers of Gravity, a list of assumptions made about the adversary when projecting the COA, a list of refined HVTs, and a list of Named Areas of Interest (NAIs),⁴ which are geographical areas where intelligence collection will be focused. There are six sub-steps involved in determining the adversary COAs.

1. Identify the adversary's likely objectives and desired end state. The analyst should begin by identifying the adversary's overall desired end state and strategic objective(s)⁵ which will form the basis for identifying subordinate objectives—which may be both tangible and intangible. Because hard intelligence may not be available to answer these questions, assumptions will likely have to be made. These assumptions should be coordinated with the Joint Force Commander, J-3, J-5, and other staff planning sections as necessary.

2. Identify adversary Critical Factors / Centers of Gravity (COGs) / Critical Capabilities (CCs) / Critical Requirements (CRs) / Critical Vulnerabilities (CVs) / Decisive Points (DPs).⁶ Once the adversary's objectives have been deduced, the staff continues its COG determination by identifying and analyzing the adversary's **critical factors**⁷ to determine his **critical strengths** and **critical weaknesses**. These critical factors can be both tangible and intangible and may come from a variety of sources: leadership,

⁴ Named Area of Interest—The geographical area where information that will satisfy a specific information requirement can be collected. NAIs are usually selected to capture indications of adversary courses of action, but also may be related to conditions of the operational environment. (JP 2-01.3)

⁵ The adversary's Desired End State and Strategic Objective(s) are products of national-strategic analysis and should be provided from those sources.

⁶ See Appendix C for a deeper description of Critical Factors and COG deconstruction.

⁷ "Critical Factors" is a cumulative term used in this instance for critical strengths and weaknesses—those military and nonmilitary capabilities considered critical to the accomplishment of the adversary's mission. Critical weaknesses, however, in terms of quantity and / or quality are inadequate to perform their intended function. One should note that JP 5-0 uses the term "critical factors" differently—to refer to critical capabilities, critical requirements, and critical vulnerabilities. See Appendix C of this workbook for a more detailed explanation.

fielded forces, resources, infrastructure, population, transportation systems, and internal and external relationships of the adversary, and so forth. To find **critical strengths**, the analyst searches for those key aspects that determine from which elements the adversary derives freedom of action, physical strength, or the will to fight. From these strengths, the analyst should recognize the adversary's COG.

Analysis of COGs (at each level of war as appropriate) is conducted only *after* gaining an understanding of the broad operational environment (paragraphs I, II, and III of the JIPOE above), but before a detailed study is made of the adversary's potential COAs. Analysts must determine whether or not potential COG(s) are truly critical to the adversary's strategy and must thoroughly examine the means by which COG(s) influence and affect adversary strategy and potential COAs. **The determination of the adversary's COG(s) is one of the most critical parts of the JIPOE process** because their proper identification can help the JFC better anticipate adversary COAs and will help shape friendly strategy and plans. The next step for the staff once the COGs are determined is to assess the **critical capabilities**, which are the crucial enablers for the COG to function. Logically following this step is the need to identify the **critical requirements**, which are the essential conditions, resources, and means for a critical capability to be operational. At this point, a vulnerability assessment will help identify the **critical vulnerabilities**, which may be exploited to gain access to the COG. During this step, it is important to note that the CVs can be found within critical strengths, capabilities, requirements, or weaknesses. By identifying the CVs, the commander can focus efforts on those critical vulnerabilities that will achieve decisive or significant results and lead to the adversary's COG.

Planners must remain alert for the tendency to focus on weaknesses that bear no relationship to the COG. These are not critical vulnerabilities and simply serve as a means of wasting friendly forces' resources. Following this, the staff must then categorize the **decisive points**, whose control of offers an advantage to both forces. However, throughout this process, the planner must realize that sometimes a situation may arise in which there are no perceived adversary vulnerabilities and, based on risk assessment, the friendly force must directly focus efforts on the adversary COG. See Appendix C for a more in-depth discussion of COG determination.

Adversary Center of Gravity Determination

Identify

1a. Desired End State

1b. Strategic Objective(s)

1c. Operational Objective(s)

2a. Critical Strengths

2b. Critical Weaknesses

3a. Strategic COG

3b. Operational COG

4. Critical Capabilities

6. Check CVs

5. Critical Requirements

7. Decisive Points

3. Identify friendly objectives and critical factors. Though **not** a product of the JIPOE process, in order for the J-2 to properly assess the adversary’s potential adversary COAs, which should focus on defeating the *friendly* COGs, he needs to have a full appreciation of the *friendly* objectives, critical factors, COGs, critical vulnerabilities, and decisive points.

★ **ATTENTION**: This sub-step **requires** the intelligence analysts to coordinate with Joint Planning Group and others to determine *friendly* critical factors such as strengths, weaknesses, and COG(s). *We will revisit this information again during Mission Analysis.*

Friendly Center of Gravity Determination

Identify

1a. Desired End State

1b. Strategic Objectives

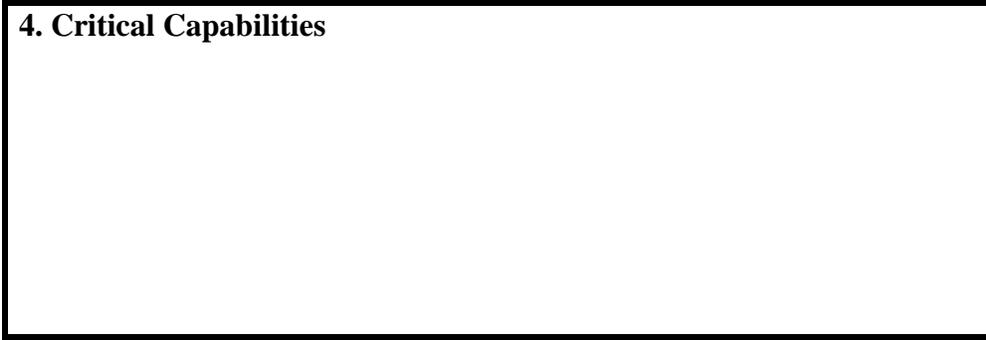
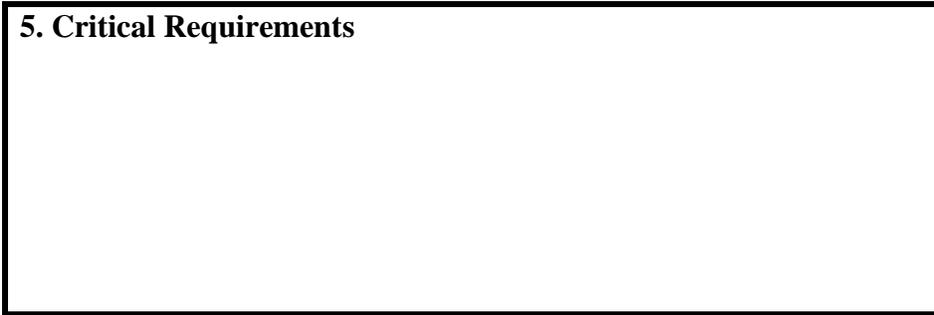
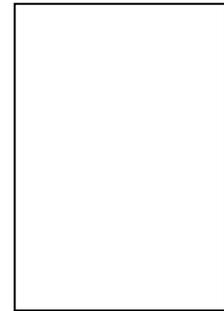
1c. Operational Objectives

2a. Critical Strengths

2b. Critical Weaknesses

3a. Strategic COG

3b. Operational COG

4. Critical Capabilities**5. Critical Requirements****6. Check CVs****7. Decisive Points**

4. Identify the full set of adversary COAs available to the adversary. In this sub-step, the preliminary list of adversary COAs (developed from DRAW-D) is reviewed and analyzed against the lists that have been made of adversary objectives and the friendly critical factors as seen by the adversary. Additional adversary COAs are developed and a consolidated list of all potential adversary COAs is constructed. Each identified adversary COA is examined to determine whether it meets the following tests:

- **Suitability:** does the adversary COA have the potential to accomplish the adversary's objective?

- **Feasibility:** does the adversary have sufficient space, time, and forces to execute the adversary COA?
- **Acceptability:** is the amount of risk associated with the adversary COA likely to exceed the level of risk the adversary will accept?
- **Uniqueness:** each adversary COA must be significantly different from the others, or else it should be considered a variation, branch or part of another adversary COA.
- **Consistency with doctrine:** does this adversary COA appear to be consistent with the adversary's doctrine, TTP, and observed patterns of operations?

(Joint Pub 2-01.3)

In applying these tests the analyst must always be careful not to discard an adversary COA just because it appears unacceptable, inconsistent with past practices, and so forth, *from our own perspective*. These tests are useful tools in determining which adversary COAs the adversary might be likely to follow, but because our understanding of the adversary's thinking will never be perfect, we must be cautious not to apply these tests too stringently. An attempt should be made to anticipate possible "wildcard" adversary COAs the adversary might use. Such asymmetric or unexpected adversary COAs could be the result of either a careful, deliberate strategy, or of a miscalculation on the part of the adversary—but they can be extremely dangerous in either case. Planners should also be careful not to "mirror image"—assuming the adversary would react as we would.

Adversary COA #1 REDLAND initially conducts joint operations to disrupt JTF Blue Sword forced entry operations, and upon establishment of the JTF Blue Sword in REDLAND, the REDLAND armed forces disperse into small-unit formations in the mountains and cities and initiate insurgency operations to defeat the JTF ground forces.

Example Adversary COA

5. Evaluate and prioritize each adversary COA. All of the identified adversary COAs are evaluated and ranked according to their probability of adoption.⁸ This prioritized list is intended to provide commanders and staffs with a starting point for the development of an OPLAN that takes into consideration the most likely, as well as the most dangerous, adversary COAs. Developing this list requires an analysis of the situation from the adversary's perspective, using what may be known about the adversary's *intentions*. This knowledge will never be complete and much of this step is based on assumptions rather than facts.

⁸ Ranking is recommended by the J-2 and approved by the commander.

Rank Adversary COAs

Adversary COAs
Adversary COA #1
Adversary COA #2
Adversary COA #3
Adversary COA #4

Not all potential adversary COAs need be retained in this step. Those that would not affect the friendly mission and those that are clearly unfeasible are discarded at this point. Potential adversary COAs should not be discarded merely because they are considered unlikely; retain it if an adversary COA would affect the mission, but list it low in probability as appropriate. Analysts must also be on guard against adversary deception efforts. The adversary may deliberately adopt a less than optimal adversary COA in order to maximize surprise or may gradually increase preparations for a specific adversary COA over a lengthy period of time, thereby psychologically conditioning the JIPOE analyst to accept that level of activity as normal and not threatening. **If an adversary COA is discarded, to avoid confusion, it is strongly recommended that you do not renumber the adversary COAs.**

After listing the adversary COAs in the relative probability of adoption, a list of adversary vulnerabilities should be compiled. These are vulnerabilities that could be exploited by friendly forces. This list will aid in later steps of the planning process when friendly COAs are compared against adversary COAs and the advantages and disadvantages of each are evaluated.

	Retained Adversary COAs (Prioritized)	Vulnerability(s)
Adversary COA #		
Adversary COA #		
Adversary COA #		

	Retained Adversary COAs (Prioritized)	Vulnerability(s)
Adversary COA # 3	REDLAND conducts a two pronged ground attack against the APOD with the 3rd RGB from the North and the 1st RGB from the South, with supporting air operations. (Most Likely)	<ul style="list-style-type: none"> • No operational Reserves remaining • Extended LOCs • Complex C3, little experience
Adversary COA # 4	REDLAND conducts a delay and interdicts friendly APODs / SPODs	<ul style="list-style-type: none"> • Weak maritime interdiction capability • Limited Operational environment for delay
Adversary COA # 1	REDLAND initially conducts joint operations to disrupt JTF Blue Sword forced entry operations, and upon establishment of the JTF Blue Sword in REDLAND, the REDLAND armed forces disperse into small-unit formations in the mountains and cities and initiate insurgency operations to defeat the JTF ground forces. (Most Dangerous)	<ul style="list-style-type: none"> • Limited popular support • Limited sustainment capability • Centralized C3 required, minimal capability

Adversary COA #		
----------------------------	--	--

Example Prioritization of Retained adversary COAs

6. Develop each adversary COA in the amount of detail time allows. Depending on the amount of time available for analysis and planning, each adversary COA is developed in sufficient detail to describe: the type of military operation involved; the earliest time military action could commence; the location of the sectors, zones of attack, avenues of approach, and objectives that make up the COA; and the expected scheme of maneuver and desired end state. adversary COAs will usually be developed in the order of their probability of adoption and should consist of a situation sketch/template, a narrative description, and a listing of HVTs.

The **situation template** (see Appendix A) for each adversary COA will normally consist of a Modified Combined Obstacle Overlay, which depicts the operational environment, together with a doctrinal template or model that shows how the adversary would be expected to act in that environment. Whenever possible, Time Phase Lines (TPLs) should be placed on the situation template to depict the expected progress of adversary force movements (such as D+1, D+2, etc.). A **situation matrix** (see Appendix A) that depicts the expected progress of adversary activity across time in a spreadsheet format may also be used. This technique is most often seen in land-centric operations.

The adversary COA **narrative description** accompanies the situation template and usually addresses the earliest time the adversary COA could be executed, location of the main effort, supporting operations, time, and phase lines. In addition, critical decisions that the adversary commander must make during implementation of the adversary COA are described in terms of their location and space as decision points.

HVTs have been initially identified in earlier JIPOE steps. They should be refined and reevaluated at this point, identified on the templates, and coordinated with the staff targeting elements for possible targeting during combat.

7. Identify initial collection requirements. Once the likely adversary COAs are determined, the challenge becomes determining which one the adversary will actually adopt. In this sub-step, the analyst attempts to identify specific areas and activities which, when observed, will reveal which COA the adversary has chosen. The geographic areas where you expect key events to occur are called **Named Areas of Interest** and the activities themselves are called **indicators**. Using a situation matrix, an **event template** graphic (see Appendix A), or other tool, the intelligence staff begins to task the appropriate collection systems and analytical assets to watch for indicators in given NAIs.

INTENTIONALLY BLANK

STEP 2: MISSION ANALYSIS⁹

I. The commander is responsible for analyzing the mission and restating the mission for subordinate commanders to begin their own estimate and planning efforts and for higher headquarters concurrence. **Mission analysis** is used to study the assigned mission and to identify all tasks necessary to accomplish it. Mission analysis is critical because it provides direction to the commander and the staff, enabling them to focus effectively on the problem at hand.

During the mission analysis process, it is essential that the tasks (specified and implied) and their purposes are clearly stated to ensure planning encompasses all requirements; limitations (restraints – can't do, or constraints – must do) on actions that the commander or subordinate forces may take are understood; and the correlation between the commander's mission and intent and those of higher and other commanders is understood. Analysis begins with the following questions:

- **What tasks must my command do for the mission to be accomplished?**
- **What is the purpose of the mission received?**
- **What limitations have been placed on my own forces' actions?**
- **What forces/assets are available to support my operation?**

Once these questions have been answered, the commander should understand the mission. The commander should become familiar with the area and the situation before initiating analysis and issuing planning guidance, particularly if this is a mission not anticipated by the command. Pertinent and significant facts are identified, and the initial assumptions to be used in the estimate process are assessed to decide their current validity.

II. Mission analysis normally contains the following steps:

- Determine planning facts
 - Determine the source(s) of the mission.
 - Determine who are the “supporting” and “supported” commanders.
 - State Higher Commander's mission.
 - State Higher Commander's intent.
 - Identify specified, derive implied, and determine essential tasks.
 - Identify externally imposed limitations affecting the mission.
 - Identify available forces and assets and noted shortfalls (to include subject matter experts).
 - Identify (planning) assumptions.
- Conduct initial risk assessment.
- Develop the restated mission statement.
- Provide a Mission Analysis Brief

⁹ If the JFC directed the use of design methodologies (see Appendix D) many aspects of Mission Analysis may have already been completed. This workbook assumes that a full Mission Analysis is required.

- Receive the Commander’s Refined Planning Guidance
- Receive the Commander’s Intent.
- Issue Commander’s Refined Planning Guidance
- Issue WARNING ORDER to subordinate commands.

1. Determine Planning Facts:

The essence of the Mission Analysis step is to ascertain **“What does the organization know about the current situation and status?”** The following paragraphs should lead the staff through the discovery of those facts.

2. The Source(s) of the Mission:

Normally found in a Higher HQ OPORD/OPLAN, planning directive, or WARNING ORDER. Depending on the scope of the operation, consider also reviewing applicable UNSCRs, alliance directives, Presidential Policy Directives, and other authoritative sources for additional information.

3. Identify the “Supported” and “Supporting Commanders” and Agencies:

The staff should be clear in their understanding of support relationships. This information will also be normally found in the Source of Mission document (s).

4. Analyze the Higher Commander’s Mission:

The higher commander’s mission statement—normally contained in Higher Commander's directive—and the capabilities and limitations of friendly forces must be studied. The commander must draw broad conclusions as to the character of the forthcoming military action. However, the commander should not make assumptions about issues not addressed by the higher commander and if **the higher headquarters’ directive is unclear, ambiguous, or confusing, the commander should seek clarification.**

Higher Commander’s Mission:

5. State the Higher Commander's Intent:

A main concern for a commander during mission analysis is to study not only the mission, but also the intent of the higher commander. Within the breadth and depth of today's operational environment, effective decentralized control cannot occur without a shared vision. Without a commander's intent that expresses that common vision, unity of effort is difficult to achieve. In order to turn information into decisions and decisions into actions that are "about right," commanders *must* understand the higher Commander's Intent. While the Commander's Intent has previously been considered inherent in the mission and concept of operations, most often you will see it explicitly detailed in the plan/order. Successfully communicating the more enduring intent allows the force to continue the mission even though circumstances have changed and the previously developed plan/concept of operations is no longer valid.

A well-devised intent statement enables subordinates to decide how to act when facing unforeseen opportunities and threats, and in situations where the CONOPS no longer applies. This statement deals primarily with the military conditions that lead to mission accomplishment, so the commander may highlight selected objectives and desired and undesired effects. The statement also can discuss other instruments of national power as they relate to the JFC's mission and the potential impact of military operations on these instruments. The commander's intent may include the commander's assessment of the adversary commander's intent and an assessment of where and how much risk is acceptable during the operation.

The higher Commander's Intent is normally found in paragraph 3, Execution, of the higher commander's directive, although its location in the text may vary. Sometimes the higher Commander's Intent may not be transmitted at all. When this occurs, the subordinate commander and staff should derive an intent statement and confirm it with the higher headquarters. The intent statement of the higher echelon commander should then be repeated in paragraph 1, Situation, of your own Operations Plan (OPLAN) or Operations Order (OPORD) to ensure that the staff and supporting commanders understand it. Each subordinate Commander's Intent must be framed and embedded within the context of the higher Commander's Intent, and they must be "nested"¹⁰ both vertically and horizontally to achieve a common military end state throughout the command. The intent statement must be within the framework of the next higher commander.

A Commander's Intent is broader than the mission statement and it is a concise, free form expression of the *purpose of the force's activities, the desired results, and how actions will progress toward that end*. It is a clear and succinct vision, of how to conduct the action. In short, it links the mission and the concept of operations. The intent expresses the broader purpose of the action that looks beyond the "why" of the immediate operation to the broader context of that mission and may include "how" the posture of the force at the end state of the action will transition to or facilitate further operations (sequels).

¹⁰ Nested refers to the concept of complementary intents among the joint force commands to ensure all are similarly focused.

A Commander's Intent is not a summary of the concept of operations. It does not tell specifically "how" the operation is being conducted. It must be crafted to allow subordinate commanders sufficient flexibility and freedom to act in accomplishing their assigned mission(s) even in the "fog of war." The intent consists of three components.¹¹

Purpose: the reason for the military action with respect to the mission of the next higher echelon. The purpose explains why the military action is being conducted. This helps the force pursue the mission without further orders, even when actions do not unfold as planned. Thus, if an unanticipated situation arises, participating commanders will understand the purpose of the forthcoming action well enough to act decisively, and within the bounds of the higher commander's intent.

Method: the "key tasks," in doctrinally concise terminology, that explain the offensive form of maneuver, the alternative defense, or other action to be used by the force as a whole. Details as to specific subordinate missions are not discussed.

End State:¹² describes what the commander wants to see in military terms ("military landscape") after the completion of the mission by his own and friendly forces.

The commander is responsible for formulating the single unifying concept for a mission. Having developed that concept, the commander then prepares his intent statement from the mission analysis, the intent of his higher commander, and his own vision to ensure his subordinate commanders are focused on a common goal. The task here is to articulate clearly the intent so it is understandable two echelons below. When possible, the commander delivers it, along with the order (or plan), personally (and/or via VTC). Face-to-face delivery ensures mutual understanding of what the issuing commander wants by allowing immediate clarification of specific points. While intent is more enduring than the concept of operations, the commander can, and should, revise his intent when circumstances dictate.

Higher Commander's Intent:

¹¹ There is no specified joint format for Commander's Intent, though the offered construct is generally accepted.

¹² This should not be confused with the concept of "Desired End State," which reflects a broader view of all instruments of power and the conditions that the highest political leadership of national or alliance/coalition forces wants in a given theater after the end of hostilities.

6. Determine specified, implied, and essential tasks:

Any mission consists of two elements: the task(s) to be accomplished by one's forces and their purpose. If a mission has multiple tasks, then the priority of each task should be clearly expressed. Usually this is done by the sequence in which the tasks are presented. There might be a situation in which a commander has been given such broad guidance that all or part of the mission would need to be deduced. Deduction should be based on an appreciation of the general situation and an understanding of the superior's objective. Consequently, deduced tasks must have a reasonable chance of accomplishment and should secure results that support the superior commander's objective.

a. State the task(s): The task is the job or function assigned to a subordinate unit or command by higher authority. A mission can contain a single task, but it often contains two or more tasks. If there are multiple tasks, they normally will all be related to a single purpose.

Depending on the objective to be accomplished, tactical, operational, and strategic tasks are differentiated. Examples of **tactical** tasks are: destroy adversary convoy TANGO; seize adversary naval base (airfield) ZULU; destroy adversary submarines in combat zone ROMEO; seize hill BRAVO, etc. Examples of **operational** tasks are: obtain and maintain maritime superiority in operations area ECHO; obtain air superiority in air area of operations HOTEL; conduct amphibious landing operation in BRAVO amphibious objective area (AOA); conduct a blockade of the CHARLIE Strait; conduct amphibious defense in the ALFA area of the coast, and so forth. Examples of strategic tasks are: destroy Purple armed forces in the Theater of Operations; seize control of country RED; destroy RED sea-based nuclear deterrent forces, and so forth. Examples of properly focused tasks, written in appropriate "joint" language are provided for each level of war in CJCSM 3500.04F *Universal Joint Task List (UJTL)*. If access to a .mil account is available, the UJTL is also available in a user-friendly search format on the JDEIS website (<https://jdeis.js.mil/jdeis/index.jsp>).

(1) **Specified Task(s)**: Tasks *listed* in the mission received from higher commander's headquarters are specified or stated (assigned) tasks. They are what the higher commander wants accomplished. The commander's specified tasks are normally found in paragraph 3b (Execution—Tasks) section of the order, but could also be contained elsewhere—for example in coordinating instructions or in annexes (though this should be avoided if possible).

Specified Task(s):

(2) **Implied Task(s):** After identifying the specified tasks, the commander identifies additional major tasks necessary to accomplish the assigned mission. Though not facts, these additional major tasks are implied tasks, which are sometimes deduced from detailed analysis of the order of the higher commander, known adversary situation, and the commander's knowledge of the physical environment. Therefore, the implied tasks subsequently included in the commander's restated mission should be limited to those considered critical to the accomplishment of the assigned mission. Implied tasks do not include routine or standing operating procedures (SOPs) that are performed to accomplish any type of mission by friendly forces. Hence, tasks that are inherent responsibilities of the commander (providing protection of the flank of his own unit, reconnaissance, deception, etc.) are not considered implied tasks. The exceptions are only those routine tasks that cannot successfully be carried out without support or coordination of other friendly commanders. An example of an implied task is if your command was given a specified task to seize a seaport facility, the implied task might be the requirement to establish maritime superiority within the area of operations before the assault.

Implied Task(s):

(3) **Essential Task(s):** Essential tasks are determined from the list of both specified and implied tasks. They are those tasks that must be executed to achieve the conditions that define mission success. Depending on the scope of the mission's purpose, some of the specified and implied tasks might need to be synthesized and re-written as an essential task. **Only essential tasks should be included in the mission statement.**

Essential Task(s):

b. State the Purpose: The purpose follows the statement of task(s). To delineate the two, the statement “in order to” should be inserted between the task(s) and purpose. Purpose is normally found at the beginning of the “Execution” section of the superior’s directive. If the superior’s directive also contains an intent statement, that should also be reviewed to help analyze the “purpose” of the operation. **The purpose always dominates the tasks.** A task or tasks can be accomplished or changed due to unforeseen circumstances, but the purpose remains essentially the same if the original mission remains unchanged.¹³ Purpose should answer the “why” question.

Example: “JTF Blue Sword will seize seaport Y (task) in order to sever Country Z’s Lines of Communication (purpose).”¹⁴

Purpose:

7. Identify Externally Imposed Operational Limitations:

a. Restraints (Can’t Do): Restraints or restrictions are things the higher commander prohibits subordinate commander(s) from doing (for example, not conducting reconnaissance flights beyond Latitude 52°, not to approach the adversary coast closer than 30 nautical miles, specific Rules of Engagement (ROE) guidance, etc.).

The commander and staff should consider the impact of the stated ROE on their ability to accomplish the mission (for example, access to or through sovereign land, sea, or airspace as a legal/political consideration). Any requirement to change the ROE, either relaxation or more restrictive, must be considered and addressed when developing the COAs.

¹³ Be alert for “Mission Creep.” As the operation proceeds and tasks with no linkage to the *purpose* are added, the force is likely experiencing mission creep. The commander should initiate a new planning process at this point to ensure the reliability of the operation.

¹⁴ If the mission statement supports a complex, multi-phased operation or campaign, it may require separate purpose and supporting tasks for each major phase.

Restraints (Can't Do):

b. Identify Externally Imposed Constraints (Must Do): The superior's directive normally indicates circumstances and limitations under which one's own forces will initiate and/or continue their actions. Therefore, the higher commander may impose some constraints on the commander's freedom of action with respect to the actions to be conducted. These constraints will affect the selection of COAs and the planning process. Examples include tasks by the higher command that specify: "Be prepared to . . ."; "Not earlier than . . ."; "Not later than . . ."; "Use coalition forces . . ." Time is often a constraint, because it affects the time available for planning or execution of certain tasks.

Constraints (Must Do):

Constraints and restraints collectively comprise "operational limitations" on the commander's freedom of action. Remember restraints and constraints do not include doctrinal considerations. Do not include self-imposed limitations during this portion of the process.

8. Analysis of Available Forces and Assets:

- a. Review forces that have been provided for planning and their locations (if known). Determine the status of reserve forces and the time they will be available.
- b. Referring back to paragraph 6 in which you identified your specified and implied tasks, now determine what broad force structure and capabilities are necessary to accomplish

these tasks (e.g., is a Carrier Strike Group or forcible entry capabilities required?). Note: The service component Liaison Officers (LNOs) and planners are critical players in this step.

- c. Identify shortfalls between the two.

CAUTION: This is just an initial JTF force structure analysis. More specific requirements will be determined after the Courses of Action have been developed and analyzed!

Forces Available and Noted Shortfalls by Task or Function

Example: **Task:** Seize APOD. **Observation:** No forced entry capability (MEU, Airborne)

★ **REMINDER:** During the JIPOE, the J-2 was provided the *Friendly Objectives*, *Critical Factors*, *Center(s) of Gravity*, *Critical Vulnerabilities*, and *Decisive Points*. These are Joint Planning Group (JPG) products from the Mission Analysis. If not already accomplished, this friendly information should now be identified. See pages 1-21 thru 1-23. ★

9. Identify Higher Command's Assumptions and Create Your Own Assumptions:

An assumption is used in the absence of facts that the commander needs to continue planning. It is a supposition on the current situation or a presupposition on the future course of events, either or both assumed to be true in the absence of positive proof, necessary to enable the commander in the process of planning to complete an estimate of the situation and make a decision on the course of action (Joint Pub 1-02). An assumption encompasses the issues over which a commander normally does not have control. If you make an assumption, you must direct resources towards turning that assumption into a fact (i.e., directing intelligence collection, RFIs, etc.) and/or developing a branch plan.

Assumptions are made for both friendly operations and the adversary. The commander can assume the success of friendly supporting actions that are essential for success, but **cannot assume success for the actions of his own forces**—no matter which COA he chooses. Planners should normally expect that the opponent will use every capability at his disposal and will operate in the most efficient manner possible. To dismiss adversary options as unlikely could dangerously limit the depth and validity of planning. Planners should not assume away an adversary capability. They cannot assume a condition simply because of a lack of accurate knowledge of friendly forces or a lack of intelligence about the adversary.

Key characteristics of assumptions are that they are reasonable suppositions— **logical** and **realistic**; and they must be **essential** for planning to continue. Existing capabilities should not be treated as assumptions. Examples of inappropriate assumptions include: “Our forces will flow into theater without delay”; “necessary logistics resources, including support to available operational forces . . . will be provided from CONUS as required,” “communications will be provided as required,” and so forth. An appropriate assumption might be, “Country Orange will remain neutral during the operation.”

Subordinate commanders must treat assumptions given by the higher headquarters as facts. If the commander or staff does not concur with the higher commander’s planning assumptions, they should be challenged before continuing with the planning process. All assumptions should be continually reviewed.

Assumptions are used in the planning process at each command echelon. Usually, commanders and their staffs should make assumptions that fall within the scope of their operational environment. We often see that the higher the command echelon, the more assumptions that will be made. Assumptions enable the commander and the staff to continue planning despite a lack of concrete information. They are artificial devices to fill gaps in actual knowledge, but they play a crucial role in planning. A poor assumption may partially or completely invalidate the entire plan—to account for a possible wrong assumption, planners should consider developing branches to the basic plan. Assumptions should be kept at a minimum.

Assumptions are not rigid. Their validation will influence intelligence collection. They must be continuously checked, revalidated, and adjusted until they are proven as facts or are overcome by events.

Higher Command’s Assumptions:

Own Assumptions:

Tests for an Assumption:

Is it logical?

Is it realistic?

Is it essential for planning?

10. Conduct an Initial Risk Assessment:

In order to advise the Commander of initial apparent risks, the staff should conduct an initial risk assessment. Risks, and their mitigation, are addressed again in STEP 3 Developing COAs. See Appendix E Risk Assessment and Mitigation for more information.

- a. There may be risks associated with:
 - (1) Mission (risks the Commander is willing to take for mission accomplishment, e.g., forward presence vs. risk of provocation).
 - (2) Force protection issues (e.g., a high risk of significant casualties, medium risk of fratricide, low risk of terrorist activities in the JOA).
 - (3) Time available as provided by Higher HQ-imposed limitations.
- b. Higher HQ might state or imply acceptable risk (e.g., could be addressed in the Higher Commander's intent, concept of operations, additional guidance).
- c. Individual staff sections determine risks from their own situational analysis and provide them to the Joint Planning Group / Operational Planning Group (JPG/OPG)¹⁵ through their representatives.
- d. The JPG/OPG determine the overall risks and consider potential methods for risk mitigation.

Initial Risk Assessment:

11. Develop Restated Mission Statement:

The product of the mission analysis is the restated mission. It must be a clear, concise statement of the essential (specified and implied) tasks to be accomplished by the command and the purpose(s) of those tasks. Multiple tasks are normally listed in the sequence to be accomplished. Although several tasks may have been identified during the mission analysis, the restated mission includes only those that are essential to the overall success of the mission. The tasks that are routine or inherent responsibilities of a commander are not included in the restated mission. The external limitations, assumptions and facts identified in

¹⁵OPG—Operational Planning Group. JPG—Joint Operational Planning Group. Those members of the service components and joint staff engaged in the planning process. These planning teams can be referred by a variety of titles.

STEP 2 are used later during the formulation of COAs. **The restated mission becomes the focus of the commander's and staff's estimates.** It should be reviewed at each step of the planning process to ensure planning is not straying from this critical focus (or that the mission requires adjustment). It is contained in paragraph 1 of the commander's estimate and paragraph 2 of the basic OPLAN or OPORD.

All efforts by the commander and the staff should be mission-oriented. Losing sight of the assigned mission will result in a confused analysis, which may ultimately lead to failure. The mission statement must contain all of the following elements:

- Who (organization, group of forces) will execute the action?
- What type of action (for example, deterrence, defeat, evacuation, etc.) is contemplated?
- When will the action begin?
- Where will the action occur (area of operations and objectives)?
- Why (the purpose of the operation)?

The element of "what" states the mission essential tasks. The unit mission statement will include on-order missions; be-prepared missions will be in the concept of operations.¹⁶

On order, JTF Blue Sword conducts operations to seize lodgments in REDLAND and defeat the REDLAND armed forces in order to eliminate terrorist safe havens in the region.

Sample Proposed Mission Statement

Restated Mission Statement:

¹⁶ An on-order task is a task that will be executed; only the timing of the execution is unknown. A be-prepared task is a task that **might** be executed, and as a contingency, the tasked unit will be prepared to execute the task if so directed. Since a be-prepared task is by definition a contingency, it cannot be considered an essential task and as such, should not appear in the mission statement.

MISSION ANALYSIS BRIEF

Upon conclusion of the Mission Analysis and JIPOE, the staff will present a Mission Analysis Brief to the commander. The purpose of the Mission Analysis Brief is to provide the commander with the results of the staff's analysis, offer a forum to surface issues that have been identified, and provide an opportunity for the commander to refine his guidance to the staff and to approve or disapprove the staff's analysis. Though unit Standard Operating Procedures (SOPs) may dictate the specific format for a Mission Analysis Brief, the following example format (see Figure 2-1) is provided:

MISSION ANALYSIS BRIEFING

<u>BRIEFER</u>	<u>SUBJECT</u>
Chief of Staff or J-5/J-3	<ul style="list-style-type: none"> - Purpose and agenda - Area of Operations (Joint Operations Area) - Design Products (if design methodologies have been used)
J-2	<ul style="list-style-type: none"> - Initial intelligence situation brief (could also include elements of the JIPOE—could be part of the design products if used)
J-5/J-3	<ul style="list-style-type: none"> - Commander's mission, intent and concept of operations - Forces currently available (U.S. and multinational) - Assumptions - Limitations — Must do and cannot do - Centers of gravity/decisive points — Adversary and friendly - Tasks to be performed <ul style="list-style-type: none"> — Specified — Implied — Essential - <i>Initial</i> JTF force structure analysis - Risk assessment - End state - Restated mission statement - Proposed Initial CCIR* - Time analysis—Including projected planning milestones
J-1**	<ul style="list-style-type: none"> - Facts, assumptions, conclusions <ul style="list-style-type: none"> — Personnel actions — Personnel services — Other personnel related support

J-4**	— Facts, assumptions, conclusions — Supply — Services — Health services — Transportation — Others
J-6**	- Facts, assumptions, conclusions
Others**	- Others as appropriate to the mission
* Optional—depends on SOP.	
** Should only be amplifications that each of these staff sections believe <u>necessary</u> for the commander to hear. The COS is the deciding authority.	

Figure 2-1. Example Mission Analysis Briefing Format¹⁷

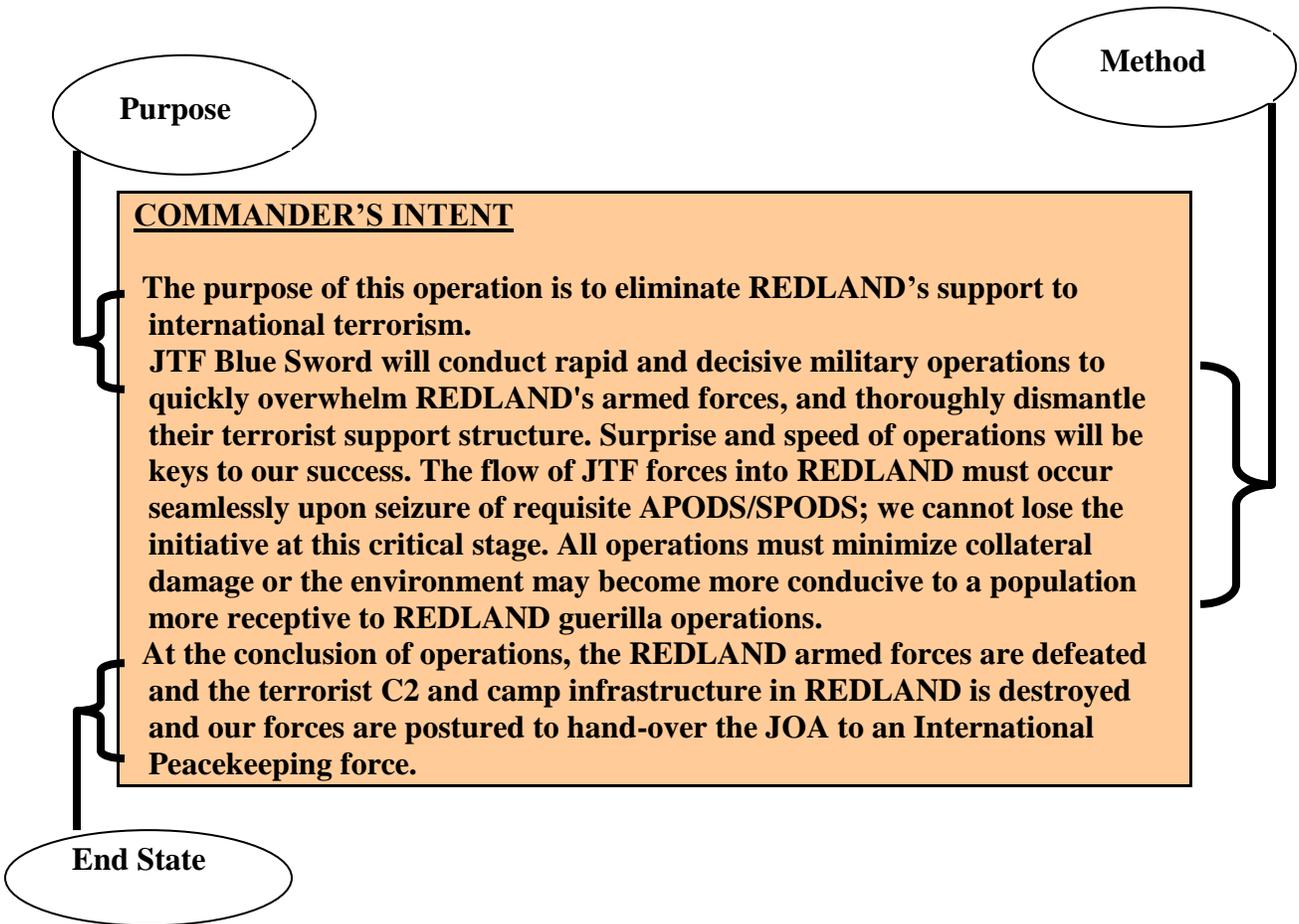
COMMANDER'S GUIDANCE AND INTENT

1. Commander's Intent:

The commander will normally issue an **initial intent** (see discussion, pp. 2-3 through 2-4) with the planning guidance and in the WARNING ORDER. The commander's intent should focus on the purpose of the forthcoming action for subordinate units two levels down. The intent statement in an OPORD or OPLAN is placed in paragraph 3, Execution.

Remember, the Commander's Intent must be crafted to allow subordinate commanders sufficient flexibility in accomplishing their assigned mission(s). It must provide a "vision" of those conditions that the commander wants to see after the military action is accomplished. The commander must define how the "vision" will generally be accomplished by forces and assets available, and the conditions/status of friendly and adversary forces with respect to the operational environment as the end state. The commander, and not his staff, writes the best Commander's Intent. There are a variety of techniques which may be used in crafting intent; one is offered below.

¹⁷ If design methodologies were used, the staff should also include conclusions and products from that process (see Appendix D).



Sample Commander's Intent Statement for a JTF Commander

Commander's Initial Intent:

2. Commander's Critical Information Requirement:

An element of information personally required and approved by the commander that directly affects his decision-making. CCIRs result from the analysis of Information Requirements (IR) against the mission and Commander's Intent and are normally limited in number (often 5 or fewer items) to enhance comprehension. They help the commander filter information available to him by defining what is important to mission accomplishment. They also help focus the efforts of his subordinates and staff in allocating resources and to assist staff officers in making recommendations. The CCIRs directly affect the success or failure of the mission and they are time-sensitive in that they drive commanders' decisions at decision points. The CCIRs contain two key subcomponents of information requirements:

- **Priority Intelligence Requirements (PIR)**—What do I need to know about the adversary (as discussed in the JIPOE section of this workbook)?
- **Friendly Force Information Requirements (FFIR)**—What do I need to know about the capabilities of our own and adjacent friendly forces (what information must we track on our own forces)?

The key question is, "What does the commander need to know in a specific situation to make a particular decision in a timely manner?" The commander decides what information is critical, based on his experience, the mission, the higher Commander's Intent, and input from the staff. CCIRs are situation-dependent and specified by the commander for each operation. He must continuously review the CCIRs during the planning process and adjust them as situations change. During the planning process, initial PIRs are identified in "JIPOE" and the initial FFIRs are developed during Mission Analysis. The staff often nominates proposed initial CCIRs for the Commander's approval during the Mission Analysis briefing. The CCIRs will be revised and updated in Step 4, "Analyze Friendly COAs."

Initial CCIR:

3. Commander's Planning Guidance:

The commander approves or modifies the restated mission and provides his staff and the subordinate commanders and their staffs initial planning guidance. The purpose of the Commander's Guidance is to focus staff effort in a meaningful direction to develop courses of action that reflect the commander's style and expectations. The content of planning guidance varies from commander to commander and is dependent on the situation and time

available. **This guidance is essential for timely and effective COA development and analysis.** The guidance should precede the staff's preparation for conducting their respective staff estimates. The commander's responsibility is to implant a desired vision of the forthcoming operation into the minds of the staff. Enough guidance (preliminary decisions) must be provided to allow the subordinates to plan the action necessary to accomplish the mission consistent with the intent of the commander two echelons above. The Commander's Guidance must focus on the essential military tasks and associated objectives that support the accomplishment of the assigned mission.

The commander may provide the planning guidance to the entire staff and/or subordinate commanders or meet with each staff officer or subordinate unit commander individually as the situation and information dictates. The guidance should be published in written form. No format for the planning guidance is prescribed; however, the guidance should be sufficiently detailed to provide a clear direction and to avoid unnecessary effort by the staff or subordinate commanders. The more detailed the guidance is, the more specific staff activities will be. And, the more specific the activities, the more quickly the staff can complete them. Yet, the more specific the activity, the greater is the risk of overlooking or inadequately examining other details that may affect mission execution.

Commander's Planning Guidance should *consider* addressing:

- Specific course(s) of action to consider or not to consider, both friendly and adversary, governing factors to use for COA assessment, and the priority for addressing them.
- Mission success criteria.
- Initial CCIR.
- Initial intent.
- Initial risk assessment.
- Intelligence, Surveillance and Reconnaissance (ISR) priorities.
- Military deception guidance (this guidance may be limited in dissemination for OPSEC purposes).
- Fires (lethal and non-lethal) direction.
- Effects (lethal and non-lethal) direction.
- Targeting direction.
- Security measures to be implemented.
- The time plan (back briefs, rehearsals, movement, etc.).
- The type of order to be issued.
- Collaborative planning sessions to be conducted.
- Deployment priorities.
- The type of rehearsal to conduct.
- Additional specific priorities for sustainment.
- Any other information the commander wants the staff and/or components to consider.

Commander's Planning Guidance can be very explicit and detailed, or it can be very broad, allowing the staff and/or subordinate commander's wide latitude in developing subsequent COAs. However, regardless of its scope, the content of planning guidance must

be arranged in a logical sequence to reduce the chances of misunderstanding and to enhance clarity. Moreover, it must be recognized that all the elements of planning guidance are only tentative.

Another aspect of the Commander's Planning Guidance that is instrumental to subsequent planning is his **governing factors**. A governing factor is defined as "those aspects of the situation (or externally imposed factors) that the commander deems critical to the accomplishment of the mission." These may be explicitly stated in the commander's planning guidance, or derived from his intent or other interactions with the commander. These factors will shape how the staff develops and analysis friendly courses of action. Governing factors will *inform* the **evaluation criteria** that the staff will craft to analyze and later compare COAs (see page 4-5 for a deeper discussion of evaluation criteria).

The commander may issue additional planning guidance during the decision making process. The focus should remain upon the framework provided in the initial planning guidance. There is no limitation as to the number of times the commander may issue his planning guidance. However, when guidance radically changes prior communications, the commander should clarify why the guidance has changed since some other aspect of the planning process may also be compromised.

Commander's Planning Guidance:

WARNING ORDER (WARNORD)

Once the commander approves the mission following the Mission Analysis briefing and evaluates the factors affecting mission accomplishment, a WARNORD will normally be issued to subordinate commanders using the five-paragraph format (SMEAC).

1. Situation	(S)
2. Mission	(M)
3. Execution	(E)
4. Admin and Logistics	(A)
5. Command and Control	(C)

It serves as a preliminary notice of a forthcoming military action with an understanding that more information will follow after the COA is selected. It is normally issued as a brief written message that lists the available information and required instructions.

The commander and his staff also refine their initial planning timeline for the use of available time. They compare the time needed to accomplish essential tasks to the higher headquarters' time line to ensure mission accomplishment is possible in the allotted time.

The commander and staff specify when and where they will conduct the various briefings that are the result of the planning process, whether they will conduct collaborative planning sessions and, if so, when and by what means, and when, where, and in what form they will conduct rehearsals. The commander can maximize available planning time for his own staff and subordinate units by sending additional WOs as detailed planning develops. This allows parallel planning by subordinate units. The commander also frequently uses LNOs to stay abreast of planning at higher headquarters.

STEP 3: COURSES OF ACTION DEVELOPMENT

A COA is any concept of operation open to a commander that, if adopted, would result in the accomplishment of the mission. For each COA, the commander must envision the employment of his forces and assets *as a whole*—normally two levels down—taking into account externally imposed limitations, the factual situation in the area of operations, and the conclusions previously drawn up during JIPOE and Mission Analysis.

This step should begin with a review of some key Steps 1& 2 information:

- Mission
- Commander's Intent
- Assumptions
- Objectives (adversary & friendly)
- Centers of Gravity (adversary & friendly)
- Decisive Points (adversary & friendly)

After receiving guidance, the staff develops COAs for analysis and comparison. The commander must involve the entire staff in their development. Commander's Planning Guidance and Commander's Intent focus the staff to produce a comprehensive, flexible plan within the time constraints. Direct commander participation helps the staff get quick, accurate answers to questions that occur during the process. COA development is a deliberate attempt to design unpredictable COAs (difficult for the adversary to deduce). A good COA will position the force for future operations and provide flexibility to meet unforeseen events during execution. It also provides the maximum latitude for initiative by subordinates.

The order from higher headquarters normally provides the what, when, and why for the force as a whole. The "who" in the COA does not specify the designation of units; it arrays assets by component (for example, naval, ground, air, space) and by function (intelligence, maneuver, fires, logistics, command and control, protection).

There are normally four steps in COA development:

- Generate options.
- Test for validity.
- Recommend command relationships.
- Prepare COA statements and sketches.

1. Generate Options:

A good COA should be capable of defeating all retained adversary COAs. In a totally unconstrained environment, the goal is to develop several such COAs. Since there is rarely enough time to do this, the commander often limits the options with his commander's guidance. The options should focus on adversary COAs arranged in order of probable adoption.

Brainstorming is the preferred technique for generating options. It requires time, imagination, and creativity, but it produces the widest range of options. The staff must be unbiased and open-minded in evaluating proposed options. Staff members can quickly identify COAs not obviously feasible in their particular areas of expertise. They can also quickly decide if they can modify a COA to accomplish the requirement or eliminate it immediately. If one staff member identifies information that might affect another's analysis, he shares it immediately. This eliminates wasted time and effort. As discussed in Mission Analysis, when developing possible adversary COAs, the staff may wish to use the **DRAW-D**¹⁸ concept to consider *general* friendly COAs.

There are several techniques that may be considered during this step as the staff develops tentative COAs. The Joint Advanced Warfighting School (JAWS) offers the following TTPs:

a. A critical first decision in COA development is whether to conduct simultaneous or sequential development of the COAs. Each approach has distinct advantages and disadvantages. The advantage of simultaneous development of COAs is potential time savings. Separate groups are simultaneously working on different COAs. The disadvantage of this approach is that the synergy of the JPG may be disrupted by breaking up the team, the approach is manpower intensive and requires component and directorate representation in each COA group, and there is an increased likelihood that the COAs will not be distinctive. While there is potential time to be saved, experience has demonstrated that it is not an automatic result. The simultaneous COA development approach can work, but its inherent disadvantages must be addressed and some risk accepted up front.

b. Planning cells with land, maritime, air, space, information operations, and special operations planners as well as Joint Interagency Coordination Group (JIACG) reps (and others as necessary) should initially develop ways to accomplish the essential tasks. Regardless of the eventual COA, the staff should plan to accomplish the higher CDR's intent by understanding its essential task(s) and purpose and the intended contribution to the higher CDR's mission success. The staff must ensure that all the COAs developed will fulfill the command mission and the purpose of the operation by conducting a review of all essential tasks

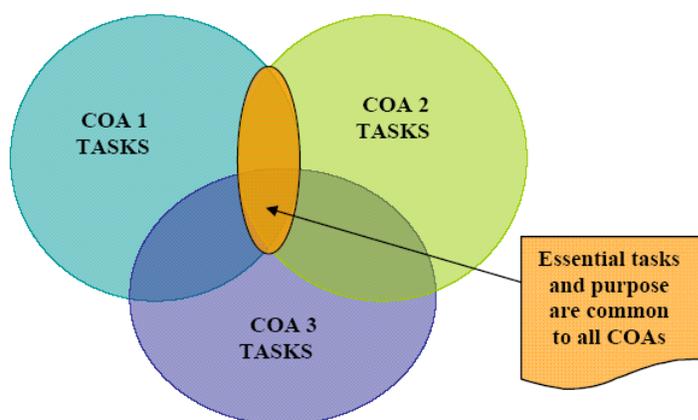


Figure 3-1. Essential Tasks and Purpose should be Common to all COAs

developed during mission analysis. They should then consider ways to accomplish the other tasks. A technique is for these planners to “think two levels down” (e.g., how could the

¹⁸ DRAW-D may be a less useful technique during the planning for Stability, Security, Transition, and Reconstruction (SSTR), since this planning may focus on actions other than those implied by DRAW-D.

MARFOR's component commands, MEF, or appropriate subordinate, accomplish the assigned tasks). See Figure 3-1.

c. Once the staff has begun to visualize a tentative COA, it should see how it can best synchronize (arrange in terms of time, space, and purpose) the actions of all the elements of the force. The staff should estimate the anticipated duration of the operation. One method of synchronizing actions is the use of phasing as discussed earlier. Phasing assists the CDR and staff to visualize and think through the entire operation or campaign and to define requirements in terms of forces, resources, time, space, and purpose. Planners should then integrate and synchronize these ideas (which will essentially be Service perspectives) by using the joint architecture of maneuver, firepower, protection, support, and command and control (see the taxonomy used in the Universal Joint Task List). **See the questions below:**

(1) **Land Operations.** What are ways land forces can integrate/synchronize maneuver, firepower, protection, support, and command and control with other forces to accomplish their assigned tasks? Compare friendly against adversary forces to see if there are sufficient land forces to accomplish the tasks.

(2) **Air Operations.** What are ways air forces can integrate/synchronize maneuver, firepower, protection, support, and command and control with other forces to accomplish their assigned tasks? Compare friendly against adversary forces to see if there are sufficient air forces to accomplish the tasks.

(3) **Maritime.** What are ways maritime forces can integrate/synchronize maneuver, firepower, protection, support, and command and control with other forces to accomplish their assigned tasks? Compare friendly against adversary forces to see if there are sufficient maritime forces to accomplish the tasks.

(4) **Special Operations.** What are ways special operations forces can integrate/synchronize maneuver, firepower, protection, support, and command and control with other forces to accomplish their assigned tasks? Compare friendly against adversary forces to see if there are sufficient special operations forces to accomplish the tasks.

(5) **Space Operations.** What are the major ways that space operations can support maneuver, firepower, protection, support and establishment of command and control?

(6) **Information Operations (IO).** What are the ways joint forces can integrate the core capabilities of electronic warfare, computer network operations, psychological operations, military deception, and operations security, in concert with specified supporting and related capabilities, to influence, disrupt, corrupt or usurp adversarial human and automated decision making while protecting our own.

d. The tentative COAs should focus on where Center(s) of Gravity (COGs) and decisive points (or vulnerabilities, e.g., "keys to achieving desired effect on centers of gravity") may occur. The CDR and the staff review and refine their COG analysis begun during mission analysis based on updated intelligence, JIPOE products and initial staff estimates. The

refined adversary and friendly COGs and critical vulnerabilities are used in the development of the initial COAs. The COG analysis helps the CDR orient on the adversary and compare his strengths and weakness to those of the adversary. The staff takes the CDR's operational design, reviews it, and focuses on the friendly and adversary COGs and critical vulnerabilities. By looking at friendly COG's and vulnerabilities, the staff understands the capabilities of their own force and those critical vulnerabilities that will require protection. Protection resource limitations will probably mean that the staff cannot plan to protect each asset individually, but rather look at developing overlapping protection techniques. The strength of one asset or capability may provide protection from the weakness of another.

f. Identify the sequencing (simultaneous/sequential/or combination) of the operation for each COA. This is not required for each COA, but may be included.

g. Identify main and supporting efforts, by phase, the purposes of these efforts, and key supporting/supported relationships within phases.

h. Identify component level mission/tasks (who, what and where) that will accomplish the stated purposes of main and supporting efforts. Think of component tasks from the perspective of movement and maneuver, firepower, protection, support and C2. Display them with graphic control measures as much as possible.

i. Develop the IO/IW mission/tasks. Since the results of deception operations may influence the positioning of units, planners should conceive major elements of the story before developing any COAs. Prioritize core/related/supporting IO capability areas to support main effort by phase. Determine C2 for IO planning and execution (is IO controlled by the JFC (J39?) or a functional component (e.g. JFMCC) or a new component (JIOTF)? Is there a need to establish a Joint Psychological Operations Task Force (JPOTF) or Electronic Warfare Coordination Cell (EWCC), based on the COA?

j. Task-Organization. The staff should develop a detailed task-organization (two levels down)¹⁹ to execute the COA. The CDR and staff determine appropriate command relationships to include operational mission assignments and support relationships.

k. Logistics. No COA is complete without a plan to sustain it properly. The logistic concept is more than just gathering information on various logistic functions. It entails the organization of capabilities and resources into an overall theater campaign or operation sustainment concept. It concentrates forces and material resources strategically so that the right force is available at the designated times and places to conduct decisive operations. Think through a cohesive sustainment for joint, single service and supporting forces relationships, in conjunction with multinational, interagency, non-governmental, or international organizations.

l. Deception. Planners should consider military deception operations for their potential influence on COAs since aspects of the deception operation may influence unit positioning.

¹⁹ The intent of arraying forces two levels down is to assess force requirements and not to micromanage subordinates.

m. Array Forces. Planners next make the initial array of friendly forces (two levels down). The initial array of forces focuses on generic units without regard to specific units or task organization, and then considers all force multipliers (i.e., airpower, IO, etc.) they must allocate to accomplish the mission. The initial array identifies the total number of units or assets needed, develops a base of knowledge to make decisions, and identifies possible methods of dealing with the adversary during scheme-of-maneuver development. If the number arrayed is greater than the number available, the shortfall becomes a possible requirement for additional resources or a place to possibly accept risk. See Appendix E for a discussion on risk assessment.

Planners should compare friendly forces against adversary forces to see if there are sufficient forces to accomplish the tasks. Planners should not develop and recommend COAs based solely on mathematical analyses of relative combat power and force ratios. Although some numerical relationships are used in this process, the estimate is largely subjective. It requires assessing both **tangible and intangible factors**, such as friction or adversary will and intentions. Numerical force ratios do not include the human factors of warfare that, many times, are more important than the number of tanks, ships, or airplanes. The staff must carefully consider and integrate the intangible factors into their comparisons using relative combat power analysis (RCPA). See Appendix B for a discussion on force ratios and relative combat power.

COA development planning should consider all joint force capabilities and focus on contributing to the defeat / neutralization of the adversary's Center of Gravity and the protection of the friendly COG. As identified in the "JIPOE," access to **both** of these COGs is found through the control/neutralization /defeat of identified critical vulnerabilities and decisive points. The COA should mass the effects of overwhelming combat power at these points to achieve a result with respect to the adversary's COG.

The massing of effects on the COG is considered the **decisive operation**. Next, the staff determines **shaping operations**—those operations that set conditions for the decisive operation to succeed. The **decisive operation's** purpose directly relates to the mission of the unit; the **shaping operation's** purpose relates directly to the decisive operation. The staff then determines the essential tasks for the decisive, shaping, and **sustaining operations**—those operations that enable shaping and decisive operations through logistics/supporting activities and operational environment management—to achieve these purposes.

Once staff members have explored each COA's possibilities, they can examine each (by changing, adding, or eliminating COAs as appropriate) to determine if it satisfies the COA-selection criteria. The staff must avoid the common pitfall of presenting one good COA among several "throwaway" COAs. Often the commander will combine COAs or move desirable elements from one to another.

COA#1: On order, JTF Blue Sword conducts airborne and amphibious operations to seize REDLAND airbase and project ground forces into REDLAND defeats the 23^d Red Guard Division and destroys terrorist sites in order to reestablish the preconflict borders and set the conditions for regional stability. Air and maritime forces conduct supporting operations and neutralize REDLAND air and naval capabilities.

Sample Tentative COA Statement

List <i>Tentative</i> Courses of Action:
COA #1:
COA #2:
COA #3:
COA #4:

2. Test for validity.

Before going any further in COA development, the staff should review the tentative COAs for their validity. Test for validity address: adequacy, feasibility, acceptability, distinguishability, and completeness.

- **Adequate.** It must accomplish the mission and comply with higher command guidance. However, the commander may modify his guidance at any time. When the guidance changes, the staff records and coordinates the new guidance and reevaluates each COA to ensure it complies with the change.
- **Feasible.** The unit must have the capability and resources to accomplish the mission in terms of available time, space, and resources, within constraints of the physical environment, logistics and sustainability, and in the face of extreme adversary

opposition. This requires a visualization of the COA against each adversary COA. Innovative COAs take full advantage of the situation and *all* available forces and assets. Any assessment of the feasibility at this point in the estimate is only tentative. The intent here is to discard COAs that are clearly not feasible because available forces and assets are inadequate.

- **Acceptable.** The advantage gained by executing the COA must justify the cost in resources, especially casualties. A COA is considered acceptable if the estimated results are worth the estimated costs—losses of friendly forces versus the mission's purpose—and it complies with higher commander's guidance. Moreover, losses in regard to time, position, or opportunity must be estimated as well. In order to determine whether a COA is acceptable it must be considered from both the commander's view and the view of the commander's superior. The COA must also be reconciled with external constraints and ROE requirements. A COA that does not meet this test must be modified to make it acceptable or discarded at this point in the estimate. This assessment is largely subjective. Like the feasibility test, the acceptability of a specific COA can only be tentative at this stage. The prospect of risk needs to be taken into account, and may have to be accepted.
- **Distinguishable.** Each COA must differ *significantly* from the other COAs. The significant differences of each COA is ensured by emphasizing distinctions in regard to: direction/type of the main effort; direction/type of supporting effort; scheme of maneuver (air, land, sea); task organization; phasing/sequencing; anticipated use of reserves; timing (simultaneous or sequential); principal method of combat employment or method of mission accomplishment; and logistics considerations.
- **Complete.** A COA is complete if it includes the following: WHO? (which component commander(s) is/are to conduct operation(s); WHAT? (the type of operation: DRAW-D); WHEN? (the time the action will begin); WHERE? (the location of action); HOW? (the method or scheme of employment of forces and assets); and WHY? (the purpose of operation).

3. Recommend Command and Control Arrangements:

Planners next establish preliminary command and control arrangements to groupings of forces for each COA. This structure should consider the types of units to be assigned to a headquarters or component and its span of control. If planners need additional headquarters, they note the shortage and resolve it later. C2 arrangements take into account the entire operational environment organization. It also accounts for the special C2 requirements of operations that have unique requirements, such as amphibious landings or special operations.

4. Develop the Course of Action statement and sketch for each COA.

a. The course of action statement describes how the forces will accomplish the commander's Intent. It concisely expresses the commander's concept for operations and governs the design of supporting plans or annexes. Planners develop a concept by refining the initial array of forces and using graphic control measures to coordinate the operation and

to show the relationship of friendly forces to one another, the adversary, and the operational environment. During this step, units are converted from generic to specific types of units, such as armored or mechanized divisions. The purpose of this step is to clarify the commander's initial intent about the deployment, employment, and support of friendly forces and assets and to identify major objectives and target dates for their attainment. In drafting the tentative concept of operations for each COA should state, in broad but clear terms, what is to be done, the size of the forces deemed necessary, and time in which force needs to be brought to bear.

A course of action statement should be simple, clear, and complete. It should address all the elements of organizing the operational environment. Depending on the time available and the complexity of the operations, the statement may include some of the following:

- The purpose of the operation.
- When forces will be deployed.
- A statement of where the commander will accept operational (and/or tactical) risk.
- Identification of critical friendly events and phases of the operation (if phased).²⁰
- How and where joint forces will be employed.
- Designation of the decisive operation, along with its task and purpose.
- Designation of shaping operations, linked to how they support the decisive operation.
- Designation of reserve, to include location, composition, task, and purpose.
- ISR and protection operations.
- Identification of options that may develop during an operation.
- Assignment of subordinate areas of operations.
- Concept of operational fires.²¹
- Determined IO concept of support and objectives.
- Prescribed formations or dispositions when necessary.
- Priorities for each operational function in support of the operation.
- Considerations of the effects of adversary WMD on the force (as applicable).

Planners nominate control measures to control subordinate units during the operation.²² Planners base control measures on the array of forces and the scheme of maneuver to defeat probable adversary courses of action. Control measures clarify responsibilities and synchronize combat power at decisive points while lessening the risk of fratricide. All control measures impose some constraints on subordinate commanders. Control measures used should be the minimum required to exercise necessary control over the operation while allowing as much freedom of action as possible to subordinates. Planners should also develop phase lines to implement expected branches and sequels.

b. The COA sketch provides a picture of the joint force employment concept of the COA. Together, the statement and sketch cover the “who” (generic task organization),

²⁰ These critical events will be used later in Step 3, “Analyze Friendly COAs (War Game).”

²¹ Operational Fires—fires applied to achieve a decisive impact on the outcome of a campaign or major operation. They can be lethal or nonlethal.

²² Some examples are identifying Joint Special Operations Area (JSOA), Amphibious Objective Areas, specific Areas of Operations for ground and/or maritime components, Joint Rear Areas, specific fire control measures, and so forth.

“what” (tasks), “when,” “where,” “how,” and “why” (purpose of the operation) for each subordinate unit/component command; and any significant risks for the force as a whole.

The sketch could include the array of generic forces and control measures, such as:

- Component command boundaries that establish the JOA/AO/AI.
- Unit deployment/employment.
- Control graphics.
- Lines of Operations (axes of advance, zones of action, etc.)
- Intermediate Staging Bases (ISBs), Bases of Operation (BOOs), Lines of Communication (LOCs), and Objectives (OBJs).
- Sea Ports of Debarkation (SPODs) and Air Ports of Debarkation (APODs)
- Named Areas of Interests (NAIs)
- Sequencing of events.
- Designation of the decisive (i.e., main effort), and shaping (i.e., supporting effort) operations.
- Adversary known or templated locations.

Planners can enhance the sketch with identifying features such as cities, rivers, and roads to help orient the commander and staff. The sketch may be on any media; what it portrays is more important than its form (see figure 3-1).

At this stage of the process, the staff might propose, or the commander might require, a briefing on the COAs developed and retained. The purpose of this briefing is to gain the commander’s approval of the COAs to be further analyzed, to receive guidance on how COAs are to be compared and evaluated, or to receive guidance for revision of briefed COAs or the development of additional COAs. This is another place where a collaborative session may facilitate subordinate planning.

The COA briefing includes:

- Updated JIPOE.
- Possible adversary COAs.
- The unit mission statement.
- The Commander’s Intent and the higher Commander's Intent.
- The COA statements and sketches.

The rationale for each includes: considerations that might affect adversary COAs; deductions resulting from a relative combat power analysis; the reason units are arrayed as shown on the sketch; the reason the staff used the selected control measures; assumed risk; and updated facts and assumptions.

After a decision is made concerning which COAs are to be further analyzed, the commander should provide additional planning guidance to subordinate commands and also request their analysis of the COAs. During Crisis Action Planning, this process may be verbal, via a change to the original WARNING ORDER and/or through the release of a COMMANDER’S EVALUATION REQUEST message. If he rejects all COAs, the staff

begins again. If he accepts one or more of the COAs, staff members begin the wargaming process.

Figure 3-2 is an example of a COA. In this case the detailed shaping operations in the early phases are what would differentiate this COA from other proposed COAs.

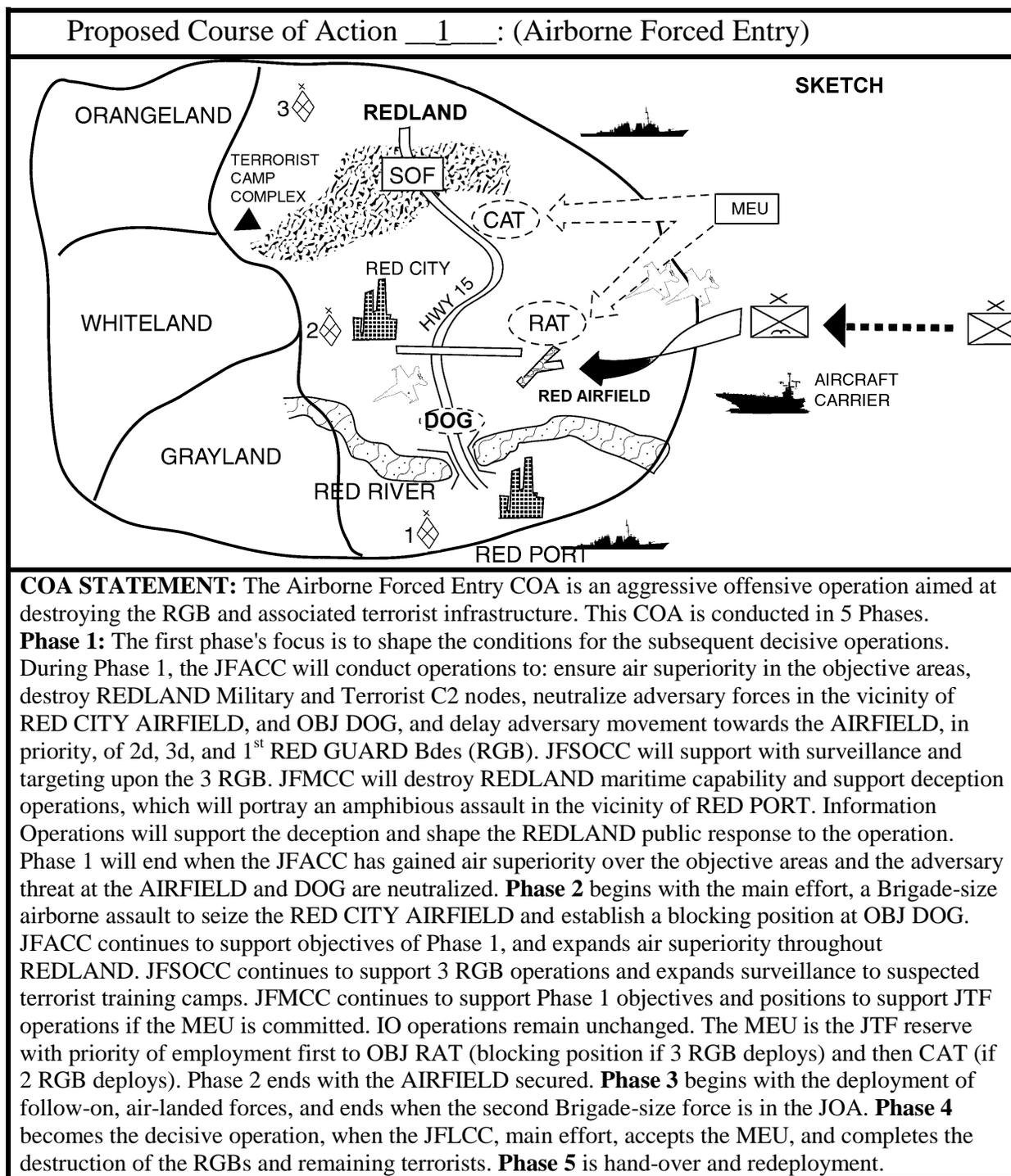


Figure 3-2. Example COA Sketch and Statement

Proposed Course of Action ____: ()
SKETCH:
COA STATEMENT:

Table 2-1. Course of Action Sketch and Statement

INTENTIONALLY BLANK

STEP 4: COURSE OF ACTION ANALYSIS AND WARGAMING

The heart of the commander's estimate process is the *analysis of opposing courses of action*. Analysis is nothing more than wargaming—either manual or computer assisted. In the previous steps of the estimate, adversary COAs and COAs were examined relative to their basic concepts—adversary COAs were developed based on adversary capabilities, objectives, and our estimate of the adversary's intent and COAs developed based on friendly mission and capabilities. In this step we conduct an analysis of the probable effect ***each adversary COA has on the chances of success of each COA***. The aim is to develop a sound basis for determining the *feasibility* and *acceptability* of the COAs. Analysis also provides the planning staff with a greatly improved understanding of their COAs and the relationship between them.

The COA analysis identifies which COA best accomplishes the mission while best positioning the force for future operations. It helps the commander and staff to:

- **Determine how to maximize combat power against the adversary while protecting the friendly forces and minimizing collateral damage.**
- **Have as near an identical visualization of the operation as possible.**
- **Anticipate events in the operational environment and potential reaction options.**
- **Determine conditions and resources required for success.**
- **Determine when and where to apply the force's capabilities.**
- **Focus intelligence collection requirements.**
- **Determine the most flexible COA.**

COA analysis is conducted using wargaming. The war game is a disciplined process, with rules and steps that attempts to visualize the flow of the operation. The process considers friendly dispositions, strengths, and weaknesses; adversary assets and probable COAs; and characteristics of the physical environment. It relies heavily on joint doctrinal foundation, tactical judgment, and operational experience. It focuses the staff's attention on each phase of the operation in a logical sequence. It is an iterative process of action, reaction, and counteraction. Wargaming stimulates ideas and provides insights that might not otherwise be discovered. It highlights critical tasks and provides familiarity with operational possibilities otherwise difficult to achieve. Wargaming is a critical portion of the planning process and should be allocated more time than any other step. **Each retained COA should, at a minimum, be war gamed against both the most likely and most dangerous adversary COAs.**

During the war game, the staff takes a COA statement and begins to add more detail to the concept, while determining the strengths or weaknesses of each COA. Wargaming tests a COA and can provide insights that can be used to improve upon a developed COA. The commander and his staff (and subordinate commanders and staffs if the war game is conducted collaboratively) may change an existing COA or develop a new COA after identifying unforeseen critical events, tasks, requirements, or problems.

Planners need to follow these general rules during the conduct of the war game:

- Remain objective, not allowing personality or their sensing of “what the commander wants” to influence them. Planners must avoid defending a COA just because they personally developed it.
- Accurately record advantages and disadvantages of each COA as they become evident.
- Continually assess suitability, feasibility, and acceptability of the COA. If a COA fails any of these tests during the war game, they must reject it.
- Avoid drawing premature conclusions and gathering facts to support such conclusions.
- Avoid comparing one COA with another during the war game. This must wait until STEP 5 (COA Comparison).

The OPG/JPG Chief is normally responsible for coordinating actions of the staff during the war game.²³ The OPG/JPG Chief is the unbiased controller of the process, ensuring the staff stays on a timeline and accomplishes the goals of the wargaming session. In a time-constrained environment, the OPG/JPG Chief ensures that, at a minimum, the decisive action is war gamed.

The J-3 (for short-term planning) or J-5 (for long-term planning) normally selects the techniques and methods that the staff will use for wargaming. The J-3 role-plays the friendly commander during the war game. The J-3 staff must ensure that the war game of the COA covers every operational aspect of the mission, records each event’s strengths and weaknesses, and annotates the rationale. When staff members are available, the J-3 should assign different responsibilities within the J-3 section for wargaming. The rationale for actions during the war game is annotated and used later to compare COAs in addition to the Commander’s Guidance.

The J-1 analyzes COAs to project potential personnel battle losses and determine how Combat Service Support (CSS) provides personnel support during operations.

The J-2 role-plays the adversary commander (unless a Red Cell is used for that role). He develops critical adversary decision points (not to be confused with decisive points) in relation to the friendly COA, projects adversary reactions to friendly actions, and projects adversary losses. When staff members are available, the J-2 should assign different responsibilities to individual staff members within the section for wargaming—such as adversary commander, friendly J-2, and adversary recorder. The J-2 must capture the results of each adversary action and counteraction and the corresponding friendly adversary strengths and vulnerabilities. By trying to win the war game for the adversary, he ensures that the staff fully addresses friendly responses for each adversary COA. For the friendly force, he identifies information requirements and refines the event template to include Named Areas of Interest (NAIs) that support decision points and refines the event matrix with corresponding decision points, Target Areas of Interest (TAIs), and high-value targets;

²³ This role is sometimes filled by the J-5, J-3, or Chief of Staff depending on a variety of factors—not the least of which is time available. Whoever fills this role should have a clear understanding of the Commander’s Intent.

refines situation templates; and participates in the targeting meetings and determines High-Payoff Targets (HPTs)²⁴ based on JIPOE.

The J-4 analyzes each COA to assess its transportation and sustainment feasibility. He estimates how long it will take for assets to arrive in theater and he determines critical requirements for each sustainment function by analyzing each COA to identify potential problems and deficiencies. He assesses the status of all sustainment functions required to support the COA and compares this to available assets. He identifies potential shortfalls and recommends actions to eliminate or reduce their effect for that COA. While improvising can contribute to responsiveness, only accurate prediction or requirements for each sustainment function can ensure the continuous sustainment of the force. In addition, the J-4 ensures that available movement times and assets will support the COA.

The Civil Affairs (CA) staff analyzes each COA for effectively integrating civil considerations into the operation. The CA staff focuses on the operational areas, but like the J1 and J-4, they must also focus on the combat support and combat service support issues, particularly those regarding foreign nation support and the care of displaced civilians. The staff's analysis of each COA considers the impact of operations on public order and safety, potential for disaster relief requirements, Noncombatant Evacuation Operations (NEO), emergency services, and protection of culturally significant sites. If the unit does not have an assigned CA staff, these CMO responsibilities should be assigned to another staff section.

Special staff officers help the coordinating staff by analyzing the COAs in their own areas of expertise (legal, public affairs, etc.), indicating how they could best support the mission. Every staff member must determine the force requirements for external support, the risks, and each COA's strengths and weaknesses. This can be greatly facilitated and refined when wargaming is done collaboratively. In addition, when conducted collaboratively, wargaming allows subordinate units to immediately see refinements to the concept of the operation that emerge with the war game process; thus the units tailor their own concepts accordingly and speed up the process.

The staff follows eight steps during the wargaming process:

- Organize for the War game.
- List all friendly forces.
- List and review adversary forces, adversary COAs, and outstanding RFIs.
- Review assumptions.
- List known critical events.
- Determine Evaluation Criteria.
- Select the war game method.
- Record and display results.
- War game the operation and assess the results.

²⁴ High Payoff Targets (HPT) are those targets whose loss to the adversary will significantly contribute to the success of the friendly course of action. HPTs are those high value targets (see JIPOE) identified through wargaming that must be acquired and successfully attacked for the success of the friendly commander's mission. (JP 2-01.3)

1. Organize for the War game:

Gather the necessary tools, materials, and data for the war game. Units need to war game on maps, sand tables, computer simulations and other tools that accurately reflect the nature of the terrain. The staff then posts the COA on a map displaying the JOA/AO and other significant control measures. Tools required include, but are not limited to:

- Display Critical Mission Analysis Information: Higher and own—Mission, Commander’s Intent, Assumptions and CCIRs.
- Event template.
- Recording method.
- Completed COAs, to include maneuver and ISR.
- Means to post adversary and friendly unit symbols.
- Chart or Map of AO/JOA (either paper or digital).
- Updated estimates and Common Operating Picture.

2. List all Friendly Forces:

The commander and staff consider all units that can be committed to the operation, paying special attention to support relationships and limitations. The friendly force list remains constant for all COAs that the staff analyzes. Note—friendly forces should also include available Information Operations assets as applicable.

NOTE: Friendly Force information should have been recorded during STEP 1—Mission Analysis.

Friendly Forces			
Ground	Maritime	Air	SOF

3. List and review adversary forces and outstanding RFIs:

The commander and staff consider all adversary units and capabilities that can be committed to the operation, paying special attention to the adversary COAs (**as developed in the JIPOE**) that will be wargamed. The staff should also review the outstanding RFIs that could bear on the forthcoming analysis.

4. Review Assumptions.

The commander and staff review assumptions (**as developed in during Mission Analysis**) for continued validity and necessity.

5. List Known Critical Events:

These are essential tasks, or a series of critical tasks, conducted over a period of time that require detailed analysis (e.g., the series of component tasks to be performed on D-Day). This may be expanded to review component tasks over a phase(s) of an operation (e.g., lodgment phase) or over a period of time (C-Day through D-Day). The planning staff may wish at this point to also identify Decision Points (those decisions in time and space that the commander must make to ensure timely execution and synchronization of resources). These decision points are most likely linked to a critical event (e.g., commitment of the JTF Reserve force).

Critical Events:

- Forced entry ops, seizure of Red Airbase
 - JTF deception operation
 - Achievement of air superiority
 - Achievement of maritime superiority
- (Example List of Critical Events)**

Critical Events:



6. Determine the Evaluation Criteria:

The commander's **governing factors** (see page 2-18) serve as the foundation of the **evaluation criteria** the staff will use to analyze and compare COAs. Evaluation criteria are those criteria the staff uses to measure the effectiveness and efficiency of one COA relative to other COAs following the war game. Evaluation criteria will always include the commander's governing factors (those aspects of the situation [or externally imposed factors] that the commander deems *critical* to the accomplishment of his mission), as well as specific critical criteria that the staff have developed in their individual staff estimates. No matter what the source is for the evaluation criteria, they should all nest firmly under the commander's previous guidance—when in doubt, ensure the commander approves the proposed criteria. Evaluation criteria must have a clearly defined definition. For example, simply stating "Risk" as criteria is too vague. Is it risk to the force? Casualty avoidance? Risk to the mission?

Evaluation criteria change from mission to mission. Though these criteria will be applied in the next step when the COAs are compared, it will be helpful during this wargaming step for all participants to be familiar with the criteria so that any insights into a given COA which influence a criterion are recorded for later comparison.

Examples include (See Figure 4-1):

- The Commander's Guidance and Commander's Intent.
- Mission accomplishment at an acceptable cost.

- The principles of war (MOOSEMUSS).
- Doctrinal fundamentals for the type of operation(s) being conducting.
- The level of residual risk in the COA.
- Other factors: political constraints, risk, financial costs, etc.

The factors should look at both what will create success and what will cause failure. They may be used to determine the criteria of success for comparing the COAs in STEP 5.

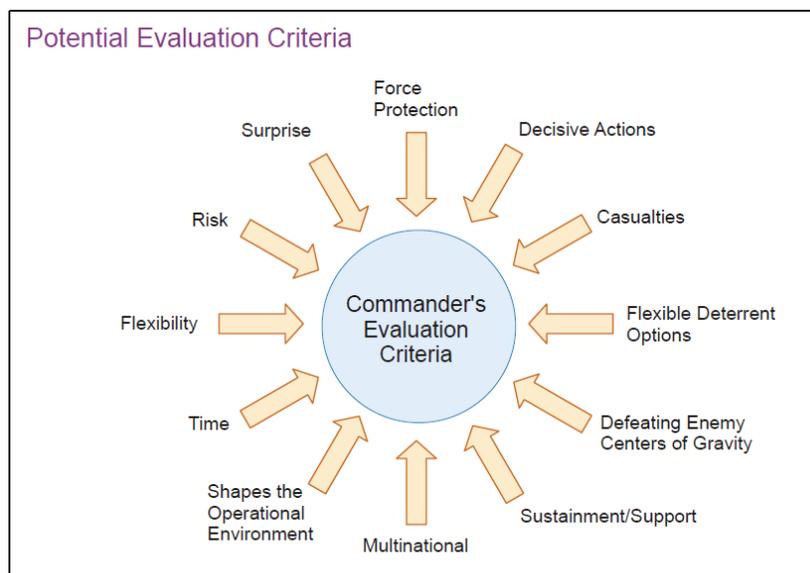


Figure 4-1. Potential Evaluation Criteria

7. Select the Wargaming Method:

There are varieties of wargaming methods that can be used, with the most sophisticated being computer-aided modeling. Though many of the wargaming techniques have been developed primarily for ground force operations, they can be adapted for the purpose of wargaming a naval operation. There are four basic wargaming methods available to the operational commander: the sequence of essential tasks, avenue in depth, belts, and box methods. The sequence of essential tasks method, which focuses on critical events, is probably the most useful wargaming method at the operational and theater-strategic levels of war and is the method illustrated in this publication.

a. Sequence of Essential Tasks Method

The sequence of essential tasks, also known as the critical events method, highlights the initial shaping actions necessary to establish a sustainment capability and to engage adversary units in the deep battle area. At the same time, it enables the planners to adapt if the adversary executes a reaction that necessitates the reordering of the essential tasks. This technique also allows war gamers to analyze concurrently the essential tasks required to

execute the CONOPS.

b. Avenue in Depth Method

Avenue in depth focuses on one avenue of approach at a time, beginning with the main effort. This technique is good for offensive COAs or for defensive situations when operating space inhibits mutual support.

c. Belts Method

Belts divide the operating space into areas that span the width of the AO. This technique is based on the sequential analysis of events in each belt; that is, events are expected to occur more or less simultaneously. This type of analysis often is preferred because it focuses on essentially all forces affecting particular events in one time frame. A belt normally includes more than one event.

d. Box Method

The box technique is a detailed analysis of a critical area, such as a landing beach or strike target. When using it, the planning team isolates the area and focuses on the critical events within that area. The assumption is that the friendly units not engaged in the action can handle the situation in their region of the operational environment and the essential tasks assigned to them.

Time and resources available to support wargaming undoubtedly influence the method selected. However, wargaming also can be as simple as using a detailed narrative in conjunction with a map/chart or situation sketch. Each critical event within a proposed COA should be wargamed based upon time available using the action, reaction, and counteraction method of friendly and adversary interaction.

8. Record and Display Results:

Recording the war game's results gives the staff a record from which to build task organizations, synchronize activity, develop decision support templates, confirm and refine event templates, prepare plans or orders, and analyze COAs based on identified strengths and weaknesses. The **War game Worksheet** (Table 4-1) can be used by staff members to record any remarks regarding the strengths and weaknesses they discover (see Figure 4-2 as an example). The amount of detail depends on the time available. Details and methods of recording and displaying war game results are best addressed in unit Standard Operating Procedures.

The War game Worksheet allows the staff to synchronize the COA across time and space in relation to the adversary COA. The War game Worksheet uses a simple format that allows the staff to game each critical event using an action/reaction/counter-action method, with an ability to record the timing of the event, force/assets requirements and remarks/observations.

9. War game the Operation and Assess the Results:

During the war game, the commander and staff try to foresee the dynamics of an operation's action, reaction, and counteraction. The staff normally analyzes each selected event by identifying the tasks the force must accomplish two echelons below. Identifying the COAs' strengths and weaknesses allows the staff to make adjustments as necessary.

Each game turn usually consists of three moves—two by the friendly force, one by the adversary force. The friendly force has two moves because the activity is intended to validate and refine the friendly force's COA, not the adversary's. If necessary, additional moves may be required to achieve desired effects.

- **Friendly Actions.** The war game begins with the first friendly action. The war game then proceeds as each warfighting function representative gives the details of the friendly COA. Representatives explain how they would predict, preclude, and counter the adversary's action.
- **Adversary Reactions.**²⁵ Normally the J-2 (or a selected RED Cell) will speak for the adversary and respond to friendly actions. He will use an adversary synchronization matrix and event template to describe the adversary's activities. The event template will be updated as new intelligence is received and as a result of the war game. These products will depict the locations of NAIs and when to collect information that will confirm or deny the adoption of a particular COA by the adversary and will serve as a guide for collection planning. The J-2 will describe adversary actions by warfighting function. He should present the adversary's concept of operations, and concept of reconnaissance and surveillance. What intelligence collection assets does the adversary have? How and when will he employ them? Also, the J-2 should describe how the adversary would organize its operational environment. He should identify the location, composition, and expected strength of the adversary reserve, as well as the anticipated decision point and criteria that the adversary commander might use in committing his reserve. Other adversary decision points that he might identify include likely times, conditions, and areas for the adversary use of weapons of mass destruction and friendly NBC defense requirements, when the adversary could begin a withdrawal, where and when the adversary will use unconventional forces, and so forth. Based on the experience level of the J-2, he might also offer insight on the likely effectiveness of friendly actions. The friendly commander will want to know what decisions the adversary commander will have to make and when those decisions will be made—"Are they event driven?" When a deception plan is being war gamed, the J-2 should outline target biases and predispositions, how and when the adversary would receive the desired misleading indicators and adversary actions that will indicate the deception has been successful.
- **Counteractions.** After the adversary reaction is executed, friendly forces will provide a counteraction and the various Operational Functions' activities will be discussed

²⁵ At a minimum, the staff should war game all friendly COAs against both the adversary's most likely and most dangerous adversary COAs. If time permits, all adversary COAs should be war gamed against all friendly COAs.

and recorded before advancing to the next series of events. If necessary, the war game facilitator authorizes more “moves” by both sides in order to achieve the desired fidelity.

The staff considers all possible forces including templated adversary forces outside the AO/JOA/AOR that could react to influence the operation. The staff evaluates each friendly move to determine the assets and actions required to defeat the adversary at each turn. The staff should continually evaluate the need for branches to the plan that promote success against likely adversary moves in response to the friendly COA. The staff lists assets used in the appropriate columns of the worksheet and lists the totals in the assets column (not considering any assets lower than two command levels down).

The commander and staff look at many areas in detail during the war game, including all adversary capabilities, deployment considerations and timelines, ranges and capabilities of weapon systems, and desired effects of fires. They look at setting the conditions for success, protecting the force, and shaping the operational environment. Experience, historical data, SOPs, and doctrinal literature provide much of the necessary information. During the war game, staff officers conduct a risk assessment in their area of expertise and responsibility for each COA.

The staff continually assesses the risk to friendly forces from catastrophic threats, seeking a balance between mass and dispersion. When assessing WMD risk to friendly forces, the planners view the target that the force presents through the eyes of an adversary target analyst. They must consider ways to reduce vulnerability and determine the mission-oriented protective posture (MOPP) level needed for protection consistent with mission accomplishment. They must also consider deployment of nuclear, biological, and chemical (NBC) decontamination assets.

The staff identifies the operational functions required to support the scheme of maneuver and the synchronization of the sustaining operation. If requirements exceed available assets, the staff recommends the priority for use to the commander based on his guidance and intent, and on the situation. To maintain flexibility, the commander may decide to withhold some assets for unforeseen tasks or opportunities. He uses this analysis to determine his priorities of support.

During the war game, the commander can modify the COA based on how the operation develops. When modifying the COA, the commander should validate the composition and location of decisive and shaping operations and reserve forces, based on the **Mission, Adversary, Terrain** (Operational environment) effects, **Troops and Equipment Available**, **Time available**, and **Civil Considerations (METT-TC)** factors, and adjust control measures as necessary. The commander may also identify combat situations or opportunities or additional critical events that require more analysis. This should be conducted expeditiously and incorporated into the final results of the war game.

If more time is available, the staff should use the more detailed **War Game Synchronization Matrix** (Table 4-2). This recording tool allows the staff to better focus the analysis within specific components and operational functions, as well as other planning

considerations (see Figure 4-2 as an example). Though its takes longer to complete, this tool will prove more helpful when the staff begins developing the detailed concept of operations upon the completion of the planning process.

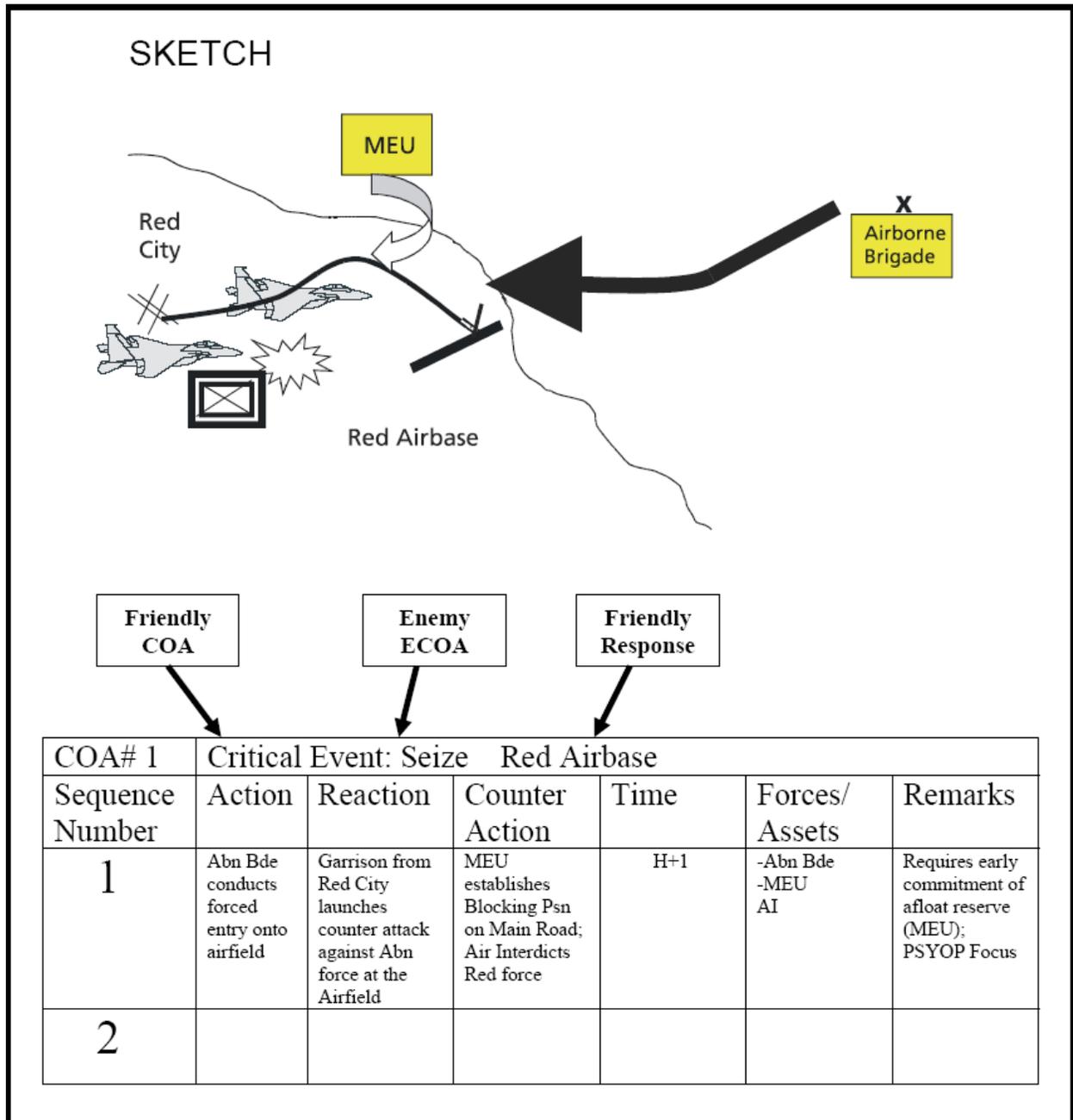
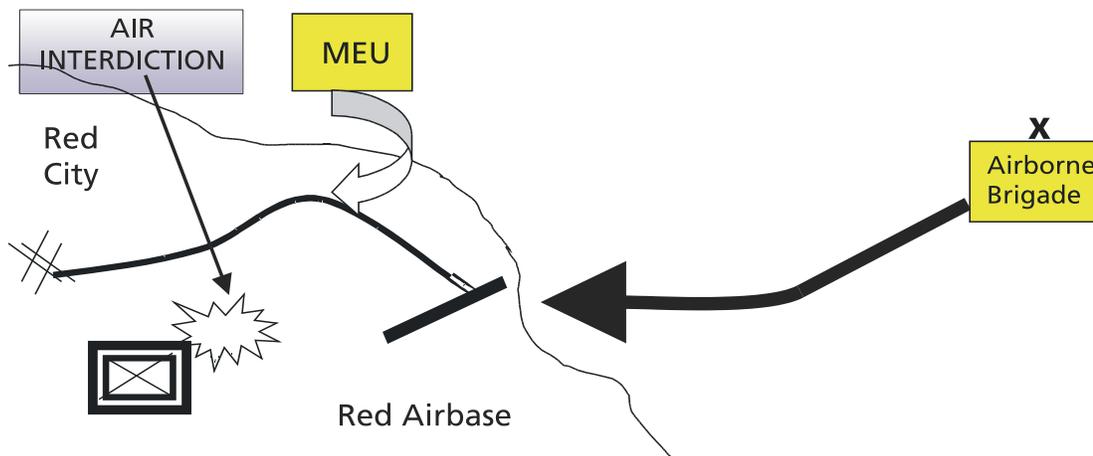


Figure 4-2. Example War Game Worksheet

Sketch:

COA #	Critical Event:					
Sequence Number	Action	Reaction	Counter Action	Time	Forces/ Assets	Remarks
1						
2						
3						

Table 4-1. Sample War Game Worksheet



	COMPONENTS/ FUNCTIONS	ACTION	REACTION	COUNTERACTION
COMPONENTS	JFLCC	Abn Bde conducts airborne forced entry on Red Airfield	Garrison from Red City launches Counter-attack against Abn force at afd	Completes Airfield seizure; establishes hasty defense
	MARFOR	MEU positioned afloat — JTF Reserve		MEU establishes blocking psn on Red City MSR
	JFMCC	CVGB provides air cap over objective area		AI focus on delay of Red Garrison Force
	JFACC	Coord forced entry air ops and CAS		Coord CAS and AI ops
	JFSOCC	SR forces in psn at airfield and Red MSR NLT H-4		Report status of Garrison Force counter attack
	JPOTF	MISO Theme per OPORD- spt forced entry		MISO teams with MEU, focus on Garrison force
OPERATIONAL FUNCTIONS	INTELLIGENCE	NAIs 1 & 2		Status of Garrison Force
	FIRES	CVGB provides air support		CAS / AI support continues
	LOGISTICS	Abn Force has 3 DOS		MEU has 15 DOS
	COMMAND & CONTROL	JTF HQ afloat		O/O MEU is passed TACON to the Abn force.
	PROTECTION	Deception theme: no impending U.S. ops		
OTHERS	DECISION POINTS		Commitment of MEU (JTF Reserve)	
	CCIR	Adversary Disposition at the airfield		Movement of the Garrison Force
	BRANCHES			Early Commitment of MEU; Joint Force Coord Required
	REMARKS			Add additional MISO Tm to MEU. Change to CCIR AI against Garrison Force

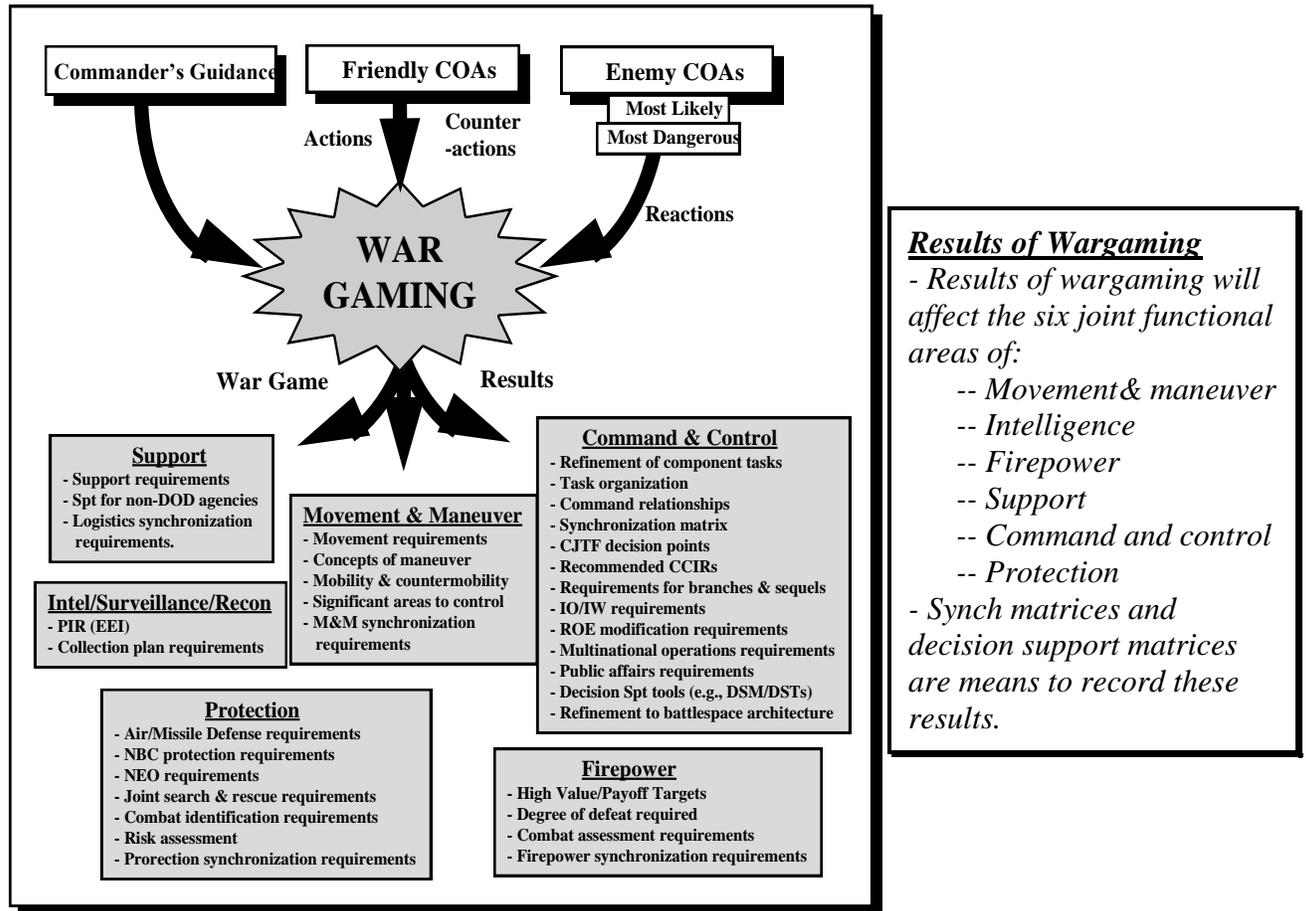
Figure 4-3. Example War Game Synchronization Matrix

Friendly COA # _____ Short Name: _____
 Adversary COA- (Most Likely / Most Dangerous)
 Time / Phase / Critical Event: _____

	COMPONENTS/ FUNCTIONS	ACTION	REACTION	COUNTERACTION
COMPONENTS	ARFOR/JFLCC			
	MARFOR			
	NAVFOR/JFMCC			
	AFFOR/JFACC			
	JFSOCC			
	JPOTF			
OPERATIONAL FUNCTIONS	INTELLIGENCE			
	FIRES			
	LOGISTICS			
	COMMAND & CONTROL			
	PROTECTION			
	MOVEMENT & MANEUVER			
OTHERS	INFORMATION OPERATIONS			
	DECISION POINTS			
	CCIR			
	BRANCHES			
	REMARKS			

Table 4-2. Sample War Game Synchronization Matrix

Figure 4-4. Wargaming Summary



An effective war game **may** also produce some of the following results²⁶

- Refining or modifying the COA, to include identifying branches and sequels that become on-order or be-prepared missions.
- Highlighting insights into the COAs that will support the next planning process step, which will be to compare the COAs.
- Identifying key or decisive terrain and determining how to use it.
- Refining the adversary event template and matrix.
- Refining task organization, to include forces retained in general support of the command.
- Identifying tasks the unit must retain and tasks to be assigned to component commands.
- Allocating operational function assets to component commands to accomplish their missions.

²⁶ As mentioned at the beginning of this step, the purpose of the war game is to provide insights into each COA in order to support the eventual commander's COA decision. Though this appears to be a lengthy list, if the war game is properly resourced with both knowledgeable participants and adequate time, the war game will also provide the commander and the staff with substantial preliminary information that will be required for the later CONOPS development.

- Developing, identifying or confirming the locations of decision points as well as the NAIs, TAIs, and IR needed to support the decision points.
- Developing a synchronization matrix;
- Developing a decision support template.
- Developing IO objectives and tasks.
- Estimating the duration of each critical event as well as of the entire operation.
- Projecting the percentage of total adversary forces defeated in each critical event as well as overall.
- Identifying likely times and areas for adversary use of WMD and friendly NBC defense requirements.
- Identifying the location and commitment of the reserve.
- Identifying / confirming the most dangerous adversary COA.
- Identifying the location of the commander, unit command posts, and IO nodes.
- Identifying additional critical events.
- Identifying additional requirements for operational function support with supporting plans and graphics.
- Determining requirements for deception and surprise.
- Refining C2 requirements, to include control measures and updated operational graphics.
- Refining CCIR and IR, to include the last time information is of value, and incorporating them into the ISR plan.
- Developing the intelligence collection and dissemination plan and the resulting ISR plan and graphics.
- Determining the timing of force concentration and initiation of the attack or counterattack.
- Determining deployment times for critical assets.
- Identifying, analyzing, and evaluating strengths and weaknesses of the COA.
- Integrating the targeting process, to include identifying or confirming HPTs and determining attack guidance.
- Identifying additional hazards, assessing their risk, developing control measures to reduce risk from all identified hazards, and determining residual risk.

STEP 5: COURSES OF ACTION COMPARISON

The fifth step in the planning process is a comparison of the remaining COAs. The commander and staff develop and evaluate a list of important evaluation criteria, consider each COA's advantages and disadvantages, identify actions to overcome disadvantages, make final tests for feasibility and acceptability and weigh the relative merits of each. Step 5 ends with a COA Decision Brief and Step 6 ends with the commander selecting a specific COA for further CONOPS development.

The COA comparison starts with each staff officer analyzing and evaluating the advantages and disadvantages of each COA from his perspective. Each staff member presents his findings for the others' consideration. The goal is to identify the strengths and weaknesses of COAs so that a COA with the highest probability of success can be selected or developed. Using revised staff estimates and the evaluation criteria developed earlier, the staff then outlines each COA, highlighting its advantages and disadvantages. Comparing the strengths and weaknesses of the COAs identifies their advantages and disadvantages with respect to each other.

The actual comparison of COAs is critical. The staff may use any technique that facilitates reaching consensus on the best recommendation, so that the commander can make a decision in choosing the best COA. A common technique is the decision matrix, which uses evaluation criteria (governing factors) to assess the effectiveness and efficiency of each COA (see Table 4-1). Each staff officer may use his own matrix, using the same evaluative criteria, for comparison in his own functional area. Decision matrices alone cannot provide decision solutions. Their greatest value is to provide analysts a criteria to compare several competing COAs against criteria, which, when met, will produce success. The matrix should use the evaluation criteria developed earlier.

1. Evaluation Criteria.

The comparison of COAs begins with evaluation criteria (see page 4-5)—these criteria were developed during after Mission Analysis.

The techniques for conducting the comparison vary, but all of them must assist the commander in reaching a sound decision. Sometimes, a “decision matrix” (Table 5-1) is used to facilitate this process. This matrix numerically portrays *subjectively* chosen and *subjectively* weighted evaluation criteria. Each staff member may use his own matrix or recommend his own choice of evaluation criteria based on his respective functional area.

The commander reviews this list and deletes or adds to it as he sees fit. The number of evaluation criteria may vary, but there should be enough to differentiate COAs.

Some general comments for creating the decision matrix:

- Once the evaluation criteria are determined, define each so they are all clearly understood by the entire staff. (For example, if MASS is used as an evaluation

criterion, does MASS help achieve the objective—as in massing effects, or does it have an adverse effect as in complicating operational protection.)

- Ensure that redundant evaluation criteria are eliminated. (For example, if a one evaluation criterion is assessing “Risk to Force” and another is assessing “Casualties,” the planning group is likely double counting the same issue.)
- Weighting of evaluation criteria (if used) should occur before the comparison begins.
- Determine how you will measure the advantages or disadvantages of an evaluation criterion. (For example, again using achievement of MASS—as in massing effects as an evaluation criterion, then what do you assess as strength? Does the ability to achieve greater than a 6:1 ratio of ground forces at a decision point, coupled with local air superiority define strength, while anything less might be considered weakness?)
- Prioritize the evaluation criteria by overall importance. (This assists in determining if weights should be assigned.)
- Determine the range of values, which may be assigned. The higher number in the range indicates the better value. Keep the numbers manageable in order to be meaningful.

As demonstrated in the completed decision matrix of Appendix G, the evaluation criteria may be evaluated on their individual merits (all weights equal) or each factor may be weighted for importance.

- When assigning weights, you should ask the question “is this factor *really* two (or three) times more important than that factor?”
- The weights are multiplied by the initially assigned score in each column; the results are then totaled.

The Chief of the OPG/JPG, sometimes the Chief of Staff (COS) normally determines the weight of each criterion based on its relative importance. The commander may also designate importance of some criteria that result in weighting those criteria. The staff officer responsible for a functional area scores each COA using those criteria. Multiplying the score by the weight yields the criterion’s value. The staff officer then totals all values. However, he must be cautious in portraying subjective conclusions as being the objective results of quantifiable analysis. Comparing COAs by category is more accurate than attempting to aggregate a total score for each COA.

The result obtained is not meant to be absolute or objective in nature. However, if the same criteria are ruthlessly applied to all COAs, the relative ranking and the merits (or faults) of each should be readily apparent. Each situation is different and requires a different set and number of evaluation criteria to be established. See Appendix G for an example of a completed matrix.

2. List Advantages and Disadvantages of Each COA.

This is perhaps the most valuable part of the comparison, because it is here that the tradeoffs between the COAs should be most apparent. The advantages and disadvantages of

COA	ADVANTAGES	DISADVANTAGES	MODIFICATIONS

Table 5-2. Comparison of Advantages / Disadvantages with Modifications

3. Compare the Merits of COAs.

The staff compares the various remaining COAs in order to determine which one best satisfies the requirements of the mission. The staff should seek to answer the question, “Is this the best we can do to carry out the mission and achieve the objective?” This question requires a resounding “yes!” The remaining COAs should not be discarded—they may be retained as possible branches and sequels, alternate plans or deception plans.

However, during the final decision, the commander may find none of the COAs analyzed to be valid. Consequently, new COAs would need to be developed. They must also be tested for adequacy and then analyzed once again against each adversary COA. If, after all analysis and comparison, no COAs are found to be adequate, feasible, acceptable, distinguishable, or complete, the commander should present the examined options along with supporting facts to his higher commander. The commander should point out what could be accomplished under the circumstances and estimate what additional forces would be required to accomplish the original mission. It is then the responsibility of the superior commander to either order that an elected COA be carried out despite the consequences or change the original mission statement.

STEP 6: COA APPROVAL

1. COA Decision.

After completing its analysis and comparison, the staff identifies its preferred COA and makes a recommendation. The staff then briefs the commander. The Chief of the OPG/JPG highlights any changes to the COAs as a result of the wargaming process. Component commanders may be present, but are not required, for the decision brief; their participation, either in person or via VTC, enhances the planning process. The **decision-briefing format** includes:

- The intent of the higher headquarters (two levels up).
- The mission.
- The status of friendly forces.
- An updated JIPOE.
- COAs, including the assumptions used in planning, results of staff estimates, and advantages and disadvantages (including risk) of each COA (with table showing COA comparison).

After the decision briefing, the commander selects the COA that most effectively accomplishes the mission. The commander will rely heavily on the staff for their professional judgment and experience; however, it is ultimately the commander's decision to make. Once the commander has selected a COA, written his intent statement, and identified his CCIRs, the selected COA may need refinement. It is this COA that the staff will continue to refine, analyze and synchronize to produce the concept of operations. The commander then issues any additional guidance on priorities for operational functions (particularly for resources he needs to preserve his freedom of action and to ensure continuous service support), orders preparation, rehearsal, and preparation for mission execution.

Having already identified the risks associated with the selected COA, the commander decides what level of residual risk he will accept to accomplish the mission and approves control measures that will mitigate the risks. If there is time, he discusses the acceptable risks with adjacent, subordinate, and senior commanders. However, the higher commander's approval to accept any risk that might imperil the higher commander's intent must be obtained. Based on the commander's decision, the staff immediately issues a Warning Order with essential information so subordinate commands can refine their plans. This Warning Order confirms guidance issued by the commander and expands on details not covered by the commander personally. At this point, the Commander may be required to release a JOPES formatted Commander's Estimate of the Situation message to either the Geographic Combatant Commander (GCC), if a JTF, or to the SecDef if the drafter is the GCC.

5. Joint Synchronization Matrix.

Based on the commander's decision and final guidance, the planning process is completed, and the staff now refines the COA and completes the plan and prepares to issue the order. The staff prepares the order or plan to implement the selected COA by turning it

into a clear, concise concept of operations. The staff development of the order/plan is often aided by completing a **joint synchronization matrix**. This internal staff planning tool is used in much the same manner as the wargaming synchronization matrix (see Appendix H for more information and a recommended format). The commander can use the COA statement as his concept of operations statement. The COA sketch can become the basis for the operation overlay. The staff assists subordinate staffs with their planning and coordination as needed.

6. Concept of Operations.

Using the joint synchronization matrix, the staff builds the concept of operations. This is the commander's clear, concise statement of who, what, where, when, why, and how he intends to concentrate combat power to accomplish the mission according to his higher Commander's Intent. It broadly outlines considerations necessary for developing a scheme of maneuver. It includes designation of the decisive operation and key shaping operations, the Commander's plan to defeat the adversary, and specific command and support relationships. These relationships are then included in the task organization and organization for combat in plans and orders. It can also include:

- Physical Objective(s)
- Commander's Intent
- Scheme of Maneuver
- Designation of Main Effort
- Designation of Supporting Effort
- Phasing
- Deception
- Employment of force elements (ground, naval, air, special forces, space, etc.)
- Fires (type, purpose, priorities)
- Allocation of sustainment assets
- CBRNE (offensive and/or defensive)
- Reserves (designation, purpose, location, and anticipated employment)

From this expanded concept of operations, the staff is ready to move to the next step, Development of Plans/Orders.

STEP 7: PLAN OR ORDER DEVELOPMENT

In this step, the staff will use the Commander's Guidance, Commander's Intent, and CONOPS to develop the required plan or order. A plan is prepared in anticipation of operations and it normally serves as the basis of a future order. An order is a written or oral communication that directs actions and focuses a subordinate's tasks and activities towards accomplishing the mission. While various portions of the plan or order have been developed during the planning process, this is the step to put them into the approved military format. Since a plan or an order will normally contain only critical or new information, not routine matters found in SOPs, a well written plan or order should be clear, as concise as possible, and focused on the mission. When developed, the military directive (as it is also known) should be synchronized, understood, and in total support of the higher commander's intent. It should also contain the following characteristics:

1. Characteristics.

- **Clarity.** Each executing commander should be able to understand the directive thoroughly. Wording should be simple, straightforward, using proper military (doctrinal) terminology.
- **Brevity.** The directive should be concise, avoiding extra words and unnecessary details; however, this should not be at the expense of completeness.
- **Authoritativeness.** Write the directive in the active voice and authoritative form of expression whenever possible.
- **Simplicity.** All elements should be as simple as possible in order to reduce misunderstandings.
- **Flexibility.** A good directive allows for adjustments that arise do to unexpected operating conditions.
- **Timeliness.** It is critical to disseminate the directive to allow adequate planning and preparation by subordinate commands. Through the use of Warning Orders as discussed in earlier steps, subordinate units can begin planning prior to receipt of the final order or plan.
- **Completeness.** It must contain all necessary information to coordinate and execute the mission, and it must provide control measures that allow for and maximize the subordinate commander's initiative.
- **Command Organization.** It must establish a clear command structure with clearly delineated responsibilities.

2. Format of Military Plans and Orders.

Plans and orders can come in many varieties from the very detailed Campaign Plans and Operations Plans to simple verbal orders. They also include Operation Orders, Warning Orders, Planning Orders, Alert Orders, Execute Orders, and Fragmentary Orders. The more complex directives will contain much of the amplifying information in appropriate annexes and appendices. However, the directive should always contain the essential information in the main body. The form may depend on the time available, the complexity of the operation, and the levels of command involved. However, in most cases, the directive will be

standardized in the five-paragraph format that was introduced back in step one. Following is a brief description of each of these paragraphs.

- **Paragraph 1 – Situation.** The commander’s summary of the general situation that ensures subordinates understand the background of the planned operations. Paragraph 1 will often contain sub paragraphs describing the higher Commander’s Intent, friendly forces, and adversary forces.
- **Paragraph 2 – Mission.** The commander inserts his restated mission (containing essential tasks) developed during the mission analysis.
- **Paragraph 3 – Execution.** This paragraph contains Commander’s Intent, which will enable commanders two levels down to exercise initiative while keeping their actions aligned with the overall purpose of the mission. It also specifies objectives, tasks, and assignments for subordinates (by phase, as applicable—with clear criteria denoting phase completion).
- **Paragraph 4 – Administration and Logistics.** This paragraph describes the concept of support, logistics, personnel, public affairs, civil affairs, and medical services.
- **Paragraph 5 – Command and Control.** This paragraph specifies the command relationships, succession of command, and overall plan for communications.

3. Commander Approval of the Plan/Order.

The commander reviews and approves orders before the staff reproduces and briefs them unless the commander has delegated that authority to the Deputy Commander, XO, COS or J-3/5. Once the plan or order is released, the command must ensure the plan or order is clearly understood by both the staff elements and subordinate commands that will be responsible for its execution. The measures taken to assure this clear understanding of the plan or order are contained in **Transition**.

See the following publications for assistance with specific formats:

NWP 5-01, Navy Planning.

MCWP 5-1, Marine Corps Planning Process.

CJCSM 3122.01 APEX Volume Planning Policies and Procedures.

CJCSM 3122.03 APEX Volume Planning Formats and Guidance.

U.S. Army FM 5.0 Army Planning and Orders Production.

TRANSITION²⁷

Transition is critical to the overall planning process. It is an on-going, concurrent process that is especially important at the operational level where typically there are separate staff sections responsible for planning and execution.

Transition is an orderly turnover of a plan or order as it is passed to those tasked with the execution of the operation. It provides information, direction and guidance relative to the plan or order that will help to facilitate situational awareness. Additionally, it provides an

²⁷ This section draws heavily from MCWP 5-1.

understanding of the rationale for key decisions necessary to ensure there is a coherent shift from planning to execution. These factors coupled together are intended to maintain the intent of the concept of operations, promote unity of effort, and generate tempo.

Successful transition ensures that those charged with executing the order have a full understanding of the plan. Regardless of the level of command, such a transition ensures that those who execute the order understand the Commander's Intent and the concept of operations. Transition may be internal or external in the form of briefs or drills. Internally, transition occurs between future plans or future and current operations. Externally, transition occurs between the commander and his subordinate commands.

1. Transition Brief

At the higher levels of command, transition may include a formal transition brief to subordinate or adjacent commanders and to the staff supervising execution of the order. At lower levels, it might be less formal. The transition brief provides an overview of the mission, Commander's Intent, task organization, and adversary and friendly situation. It is given to ensure that all actions necessary to implement the order are known and understood by those executing the order. The commander, deputy commander, chief of staff, or organizational SOP provides transition brief guidance, which may prescribe who will give the brief, the briefing content, the briefing sequence, and who is required to attend. Time available dictates the level of detail possible in the transition brief. Orders and supporting materials should be transmitted as early as possible before the transition brief. The brief may include items from the order or plan such as:

- Higher headquarters mission (tasks and intent).
- Mission.
- Commander's Intent.
- CCIRs.
- Task organization.
- Situation (friendly and adversary).
- Concept of operations.
- Execution (including branches and potential sequels).
- Planning support tools (such as synchronization matrix, JIPOE products, etc.).

2. Confirmation Brief

A confirmation brief is given by a subordinate commander after he receives his order or plan. Subordinate commanders brief the higher commander on their understanding of commander's intent, their specific task and purpose, and the relationship between their unit's missions and the other units in the operation. The confirmation brief allows the higher commander to identify gaps in his plan, identify discrepancies between his and subordinate commander's plans, and learn how subordinate commanders intend to accomplish their mission.

3. Transition Drills.

Transition drills increase the situational awareness of the subordinate commanders and the staff and instill confidence and familiarity with the plan. Sand tables, map exercises, and rehearsals are examples of transition drills. A common term used to describe transition drills is a “rock drill” or “ROC drill.”²⁸ See Appendix I for a detailed discussion on rehearsals.

²⁸ One will encounter two variants of this term. While some organizations (usually Army) refer to transition drills as a “rock drill” from the image of moving rocks around on a sand table or the ground as a means of replicating unit movements, others use the acronym of “ROC drill,” which stands for Rehearsal of Concept. No matter which term is used, the purpose of the drill is identical.

INTENTIONALLY BLANK

APPENDIX A: JIPOE Products

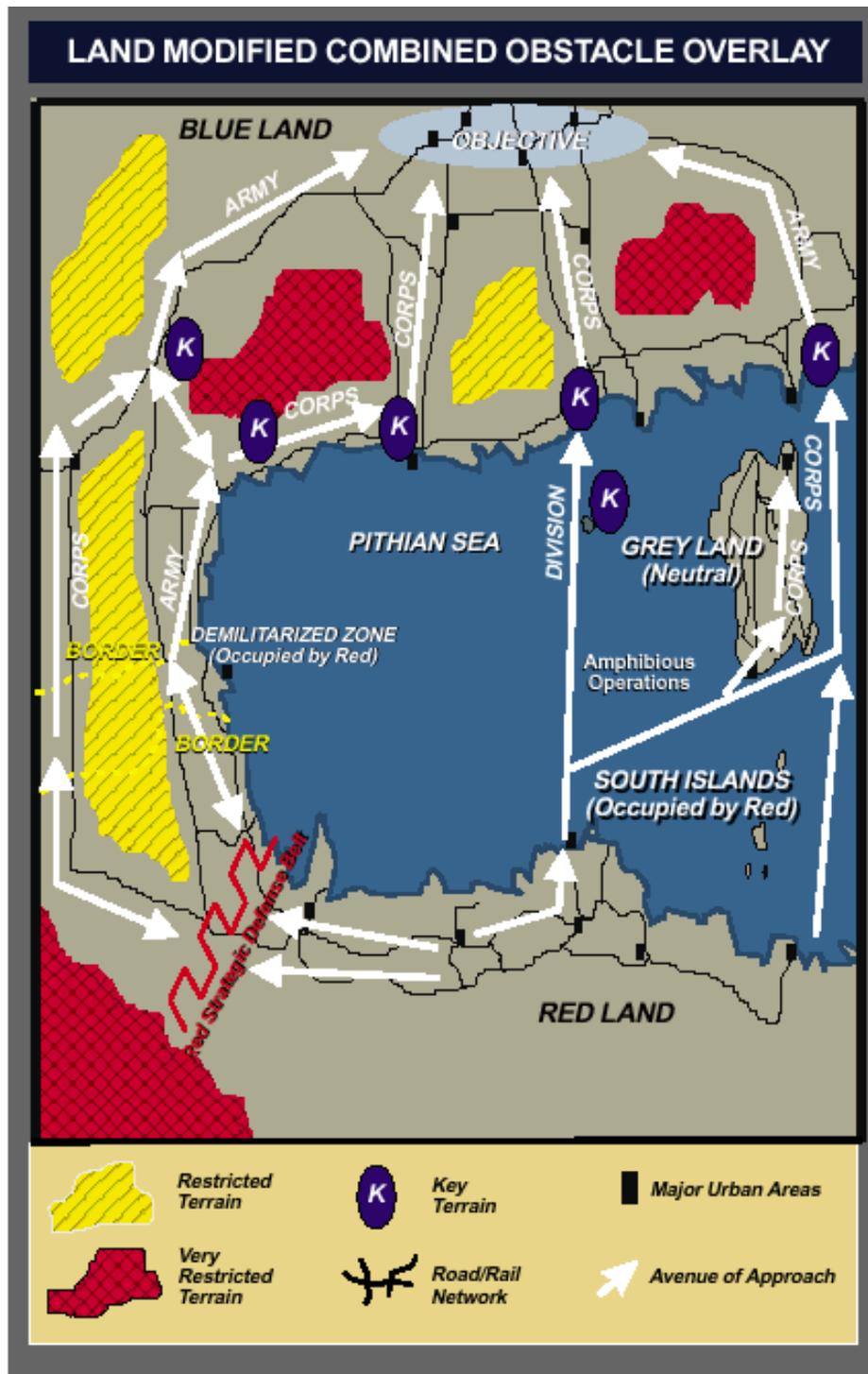


Figure A-1. Example of a Land MCOO (JP 2-01.3)

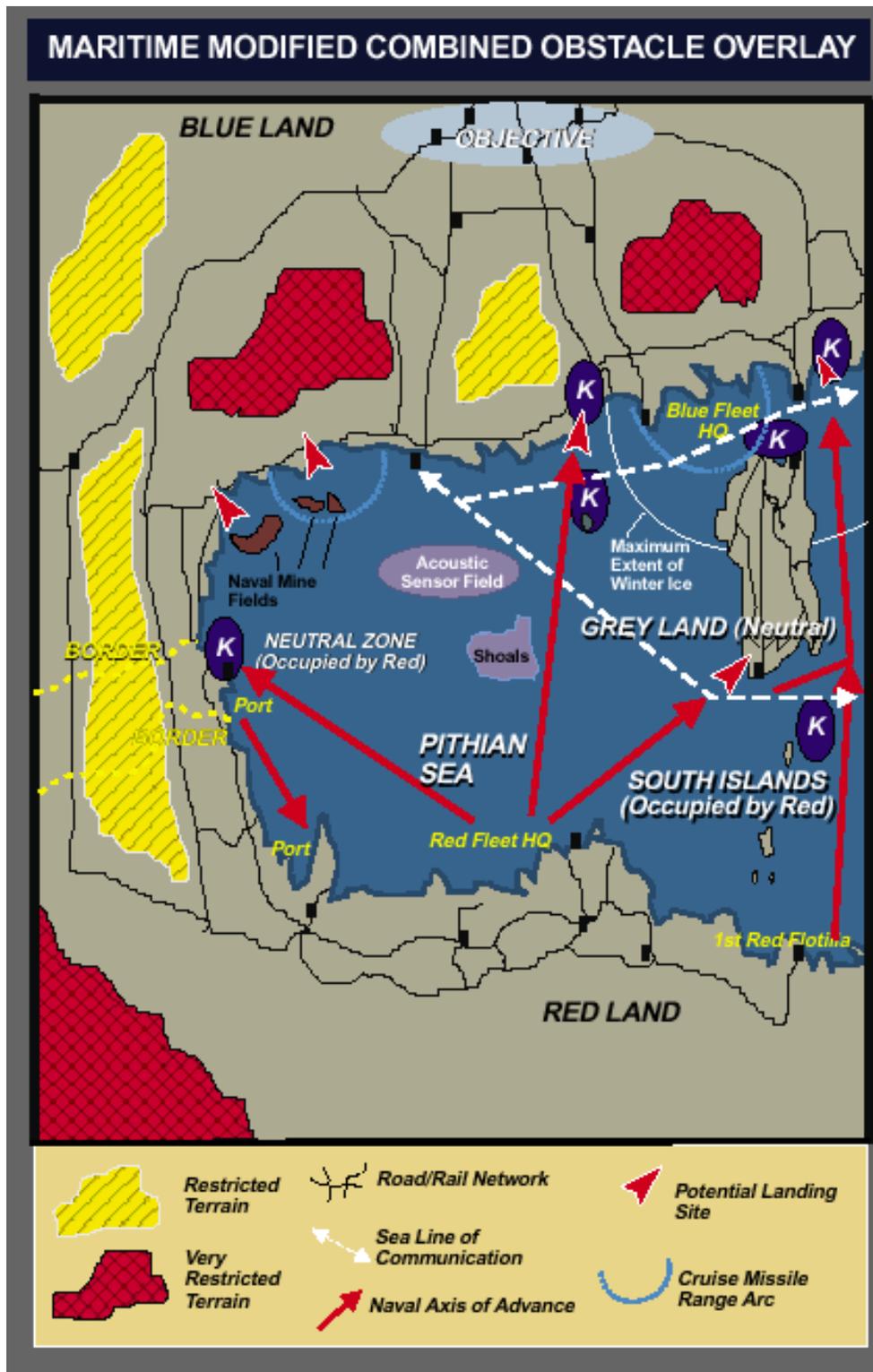


Figure A-2. Example of a Maritime MCOO (JP 2-01.3)

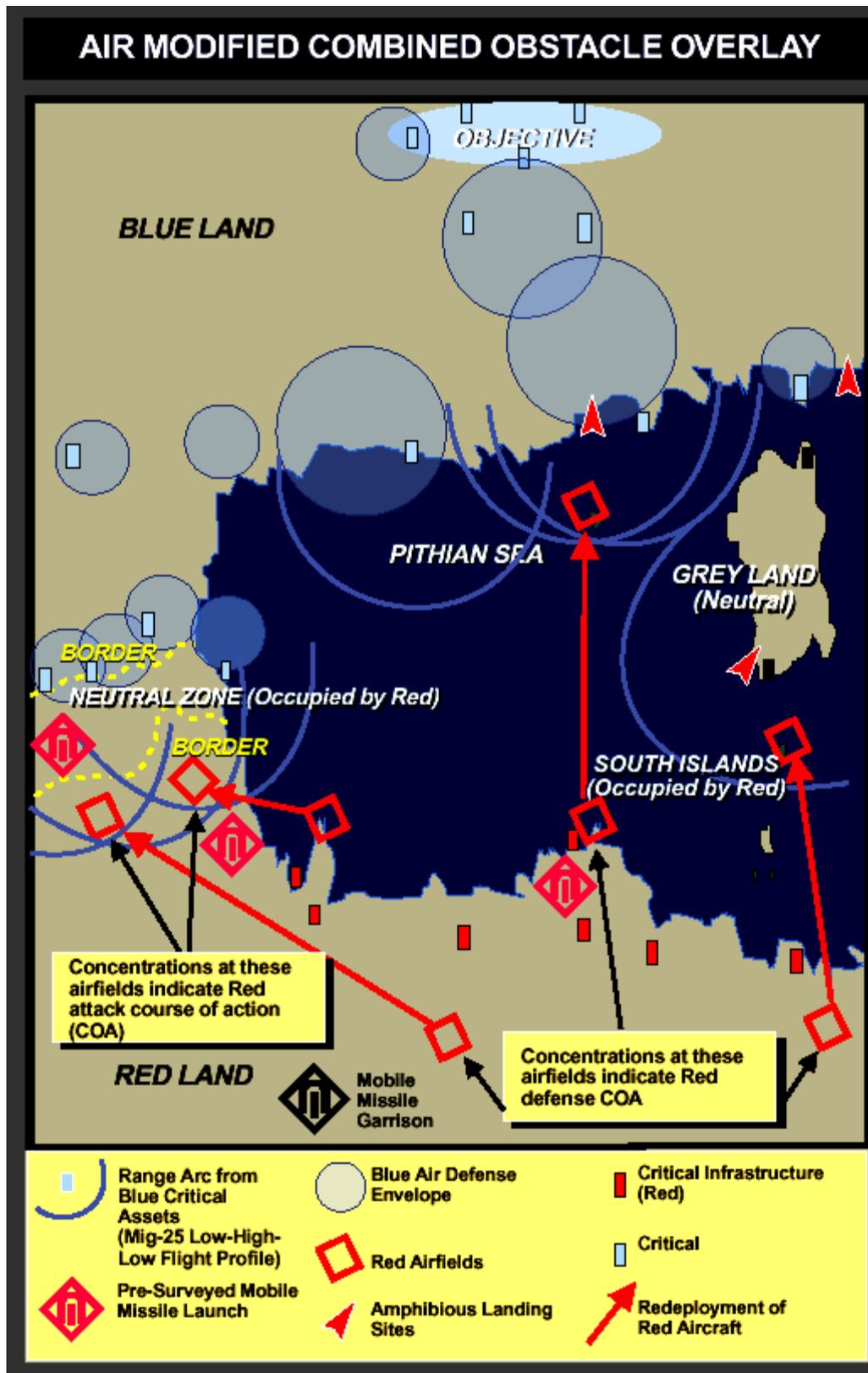


Figure A-3. Example of an Air MCOO (JP 2-01.3)

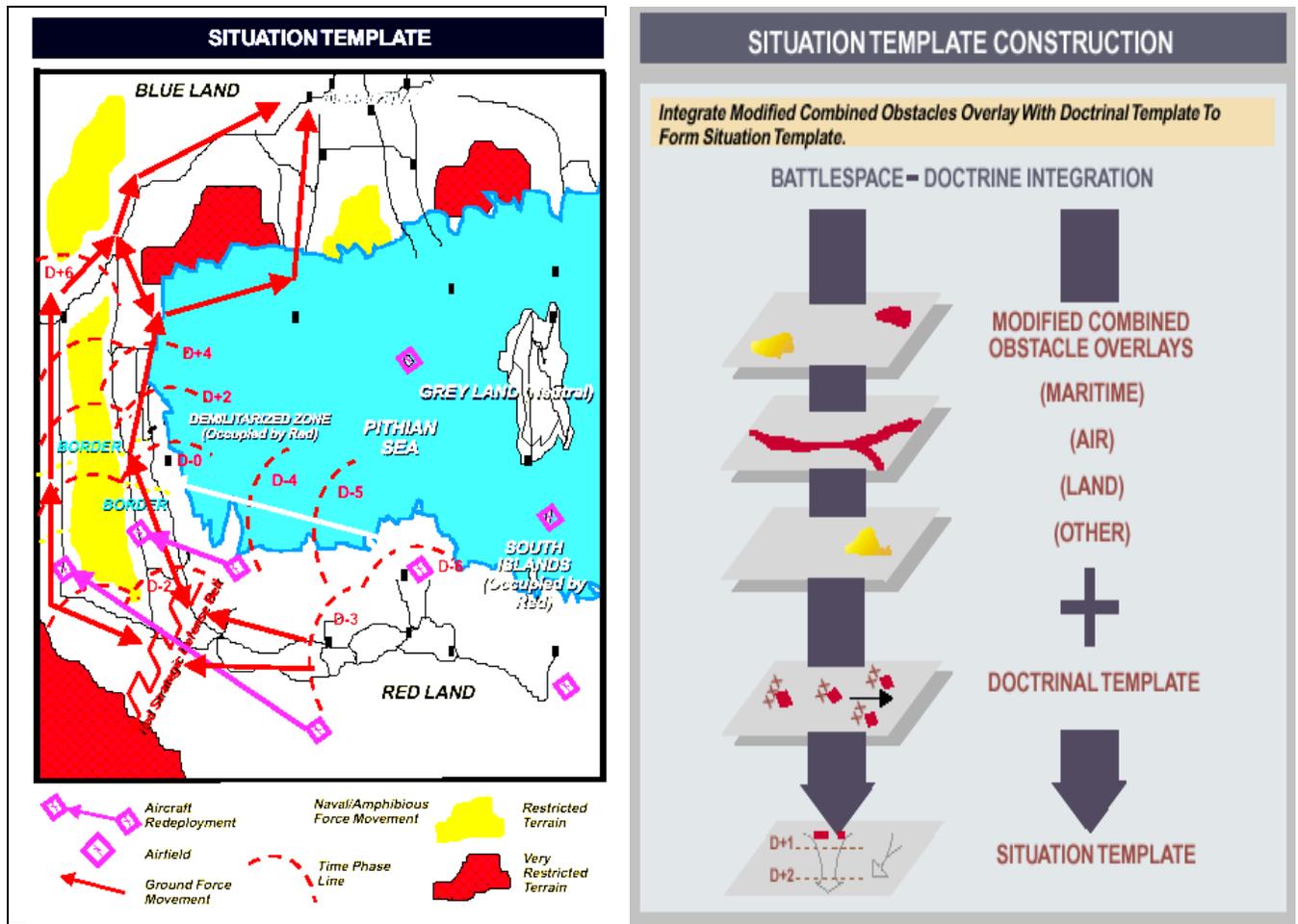


Figure A-4. Situation Template Construction and Example (JP 2-01.3)

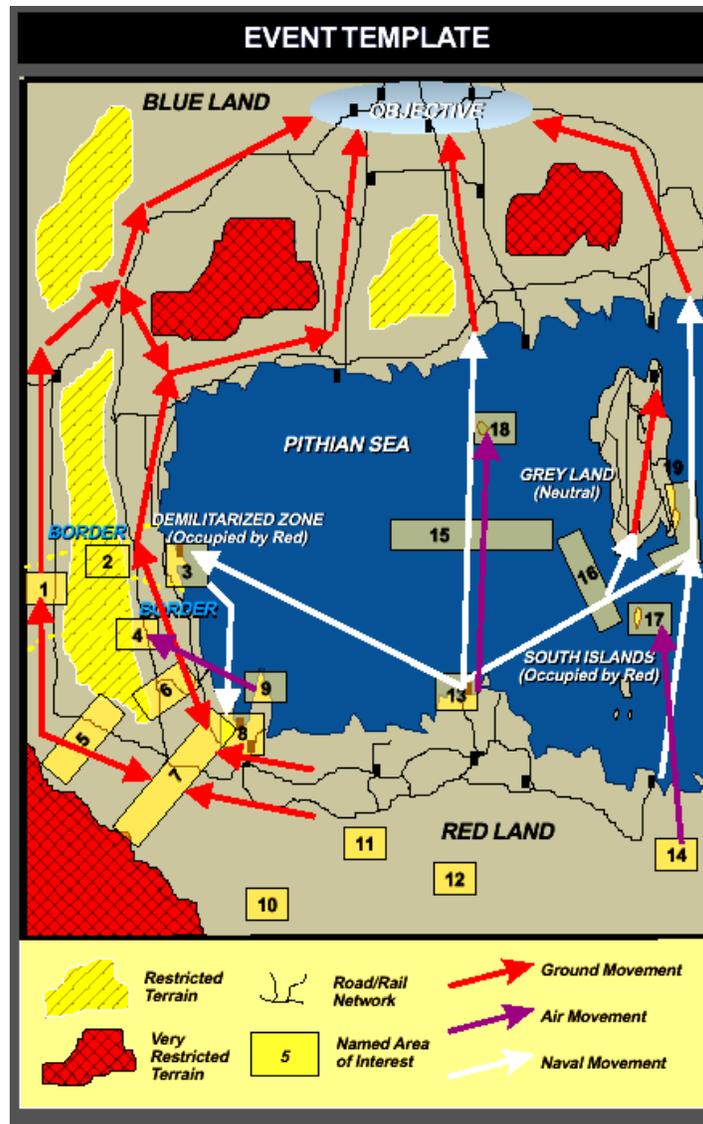


Figure A-5. Example Event Template Showing NAIs (JP 2-01.3)

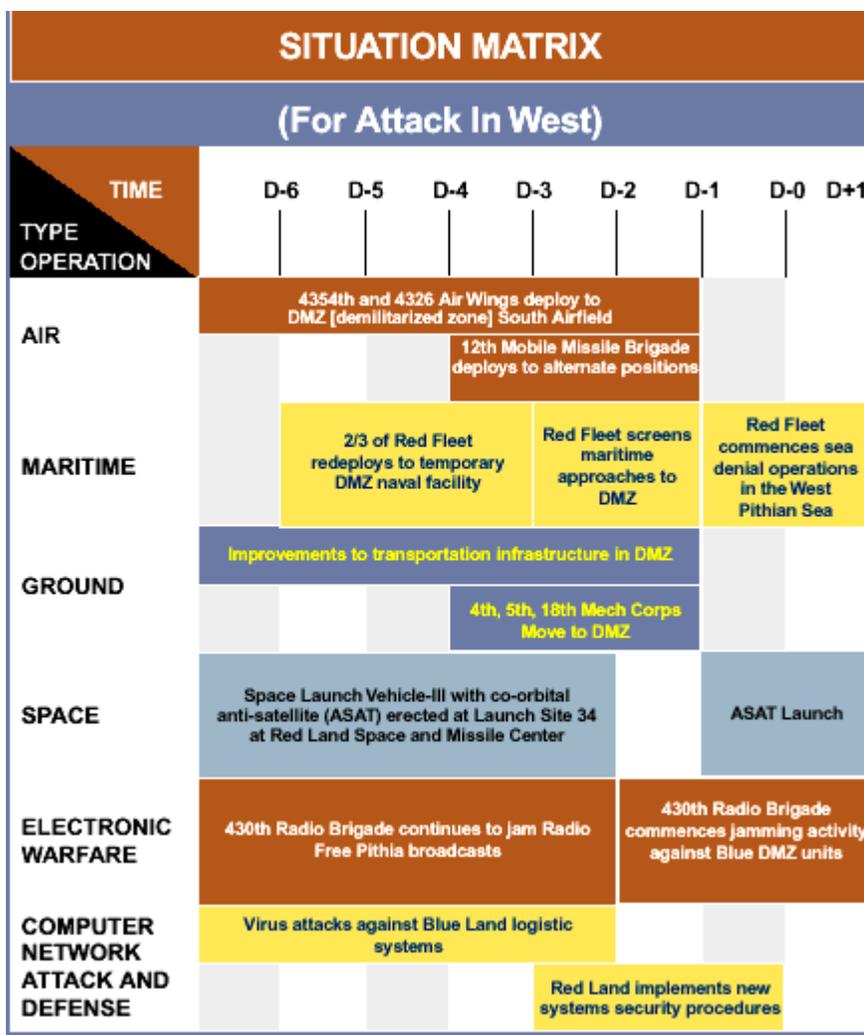


Figure A-6. Example of a Situation Matrix (JP 2-01-3)

Many different formats and methods may be used. An example of one type of collection matrix is provided below.

NAI	Est Time	Indicators Adversary COA1	Indicators Adversary COA2	Indicators Adversary COA3
1	D-3	Surface combatants missing from port		Forward movement of corps size force
2	D-2		Forward deployment of combat aircraft	Laying of minefields
3	D-1	Increased reconnaissance along coastal areas	Increased IADS readiness and activity	
4	H-12	Naval SOF activity		Artillery assault

Appendix B: Deliberate Planning and the JOPP

Purpose. While the steps used in the JOPP are applicable to both deliberate and crisis action planning, there are some differences in methodologies—sometimes subtle—as a result of the nature of the two types of planning events (See Table B-1). Crisis planning—which this workbook is structured to reflect—is initiated by a rapidly emerging threat or crisis and requires a timely developed order. Deliberate planning, on the other hand, is initiated by strategic direction and seeks, over a period of time normally measured in months, to create a planning directive to address a potential threat or crisis.²⁹ In crisis action planning, a specific threat or issue has manifested which requires detailed planning for likely execution. Deliberate planning, however, is based upon a potential threat or issue. There will be more unknowns and less certainty. Strategic guidance which generated the deliberate

Deliberate Planning and Crisis Action Planning Comparison			
	Deliberate Planning		Crisis Action Planning
Time available	As defined in authoritative directives (normally 6+ months)		Situation dependent (hours, days, up to 12 months)
Environment	Distributed, collaborative planning		Distributed, collaborative planning and execution
JPEC involvement	Full JPEC participation (Note: JPEC participation may be limited for security reasons.)		Full JPEC participation (Note: JPEC participation may be limited for security reasons.)
APEX operational activities	Situational awareness Planning		Situational awareness Planning Execution
APEX functions	Strategic guidance Concept development Plan development Plan assessment		Strategic guidance Concept development Plan development Plan assessment
Document assigning planning task	CJCS issues: 1. JSCP 2. Planning directive 3. WARNORD (for short suspense planning)		CJCS issues: 1. WARNORD 2. PLANORD 3. SecDef-approved ALERTORD
Forces for planning	Apportioned in JSCP		Allocated in WARNORD, PLANORD, or ALERTORD
Planning guidance	CJCS issues JSCP or WARNORD CCDR issues PLANDIR and TPFDD LOI		CJCS issues WARNORD, PLANORD, or ALERTORD CCDR issues WARNORD, PLANORD, or ALERTORD and TPFDD LOI to subordinates, supporting commands, and supporting agencies
COA selection	CCDR selects COA and submits strategic concept to CJCS for review and SecDef approval		CCDR develops commander's estimate with recommended COA
CONOPS approval	SecDef approves CSC, disapproves or approves for further planning		President/SecDef approve COA, disapproves or approves further planning
Final planning product	Campaign plan Level 1–4 contingency plan		OPORD
Final planning product approval	CCDR submits final plan to CJCS for review and SecDef for approval		CCDR submits final plan to President/SecDef for approval
Execution document	Not applicable		CJCS issues SecDef-approved EXORD CCDR issues EXORD
Legend	ALERTORD	alert order	JSCP
	APEX	Adaptive Planning and Execution	LOI
	CCDR	combatant commander	PLANDIR
	CJCS	Chairman of the Joint Chiefs of Staff	PLANORD
	COA	course of action	OPORD
	CONOPS	concept of operations	SecDef
	CSC	commanders' strategic concept	TPFDD
	EXORD	execution order	WARNORD
	JPEC	joint planning and execution community	
			Joint Strategic Capabilities Plan letter of instruction
			planning directive
			planning order
			operations order
			Secretary of Defense
			time-phased force and deployment data
			warning order

Table B-1. Comparison of Deliberate and Crisis Action Planning

²⁹ Deliberate planning can also be initiated by the JFC without strategic direction. In this case, the inputs to the process would be locally generated and one would expect to have an increase in planning assumptions until the planning is socialized with the strategic level.

planning requirement may be dated. Unlike the detailed planning required for crisis action planning, deliberate planning will often be conceptual.

This appendix reviews each of the previously addressed JOPP steps and highlights those differences a planner may encounter when developing a deliberate plan.

1. Planning Initiation during Deliberate Planning.

In crisis action planning (CAP), planning is most often initiated by a CJCS warning order. Deliberate planning is initiated with the release of a new Joint Strategic Capabilities Plan (JSCP). In addition, the JSCP is informed by the Guidance for the Employment of the Force (GEF).

Reflecting clearer linkages from strategy to operations/activities, the GEF (classified SECRET/LIMDIS) incorporates the guidance for:

- Security Cooperation- Tasks combatant commanders with developing theater campaign plans to illustrate how all steady-state activities in their respective AORs contribute to strategic end states. Provides focus areas and tools for combatant commanders (CCDRs) to integrate into their peacetime military engagement activities on a regional basis, thereby gaining efficiency through the coordination of engagement activities, theater end states, and objectives.
- Deliberate Planning- Guides the development of deliberate plans, which could be branches to the theater campaign plan.
- Global Posture- Provides DOD-wide global defense posture realignment guidance, to include DOD’s broad strategic themes for posture changes and overarching posture planning guidance, which inform the Joint Strategic Capabilities Plan (JSCP) theater posture planning guidance. Establishes the requirement for combatant commanders to submit theater posture plans annually.
- Global Force Management- Enables global sourcing— regardless of the command or Service to which the force is assigned—of combatant command force requirements. Provides a decision framework for making assignment and allocation recommendations to the SecDef and apportionment

I. Introduction	Annexes
II. Global Priorities & Strategic Assumptions	A. Contingency Planning Guidance
III. Guidance for Global Force Management	B. Nuclear Weapons Employment Guidance
IV. Global Defense Posture	C. Security Cooperation Tools/Resources
V. Campaign Planning Overview	D. Procedures for Changes
VI. General Planning Guidance	E. Strategic End States
VII. Functional Planning Guidance	F. Approved Defense Posture Changes
VIII. Regional Planning Guidance	References
IX. Implementation Guidance	Glossary
X. Campaign Assessments	Acronyms

Figure B-1. GEF Organization

recommendations to the CJCS. The Force Allocation Decision Matrix provides the framework for prioritizing sourcing CCDR force requirements with finite forces. Allows for the SecDef to make proactive, risk informed force management allocation decisions.

- Nuclear Weapons Planning- Self-explanatory.

The GEF (released by the SecDef) is developed in parallel with the JSCP (released by the CJCS), creating complementary products.

The GEF is organized with ten chapters and multiple annexes (see Figure B-1). It transitions DOD's planning from a contingency-centric approach to a strategy-centric approach. It directs CCDRs to create campaign plans to achieve theater and functional strategic end states. In order to support the campaign requirement, the GEF provides combatant commands:

- DOD global prioritized end states as well as theater strategic or functional strategic end states for campaign planning
- Strategic assumptions³⁰
- Prioritized deliberate planning scenarios and end states
- Global posture and global force management guidance
- Security cooperation priorities
- Overarching DOD and U.S. nuclear policy

Chapters seven (Functional Planning Guidance) and eight (Regional Planning Guidance) are further divided into combatant command specific sections that provide focused guidance to the respective commands. The guidance is grouped under the categories of:

- **Planning Requirements** – to include specific planning scenarios.

³⁰ The GEF uses two forms of assumptions, strategic and planning. The GEF defines a Strategic Assumption as “a supposition about current regional or global strategic dynamics, or future course of events, either or both assumed to be true in the absence of proof, necessary to enable the President, Secretary of Defense, and/or Combatant Commander to scope the extent of planning required, identify political-military planning requirements, and establish the range of macro political-military options for campaign or contingency planning.” A Planning Assumption is “a supposition on the current situation or a presupposition on the future course of events, either or both assumed to be true in the absence of positive proof, necessary to enable the commander in the progress of planning to complete an estimate of the situation and make a decision on the course of action.”

- **Strategic Context** – not simply boiler plate, this stove-pipe-breaking guidance places the AOR or functional area in a broader framework.
- **Prioritized End States** – the GEF distinguishes prioritized *theater strategic end states* for geographic combatant commands (GCCs) and prioritized *strategic end states* for functional combatant commands (FCCs).
- **Theater Strategic Assumptions** – these assumptions narrow the focus of Chapter two’s *Global Strategic Assumptions*.
- **Campaign Planning Priorities** – this guidance also revises the previous “Tier” categories and now includes groupings of nations / organizations, as appropriate, into the categories of *critical partners*, *key supporting partners*, and *actors of concern* (See Figure B-2).
- **Additional Planning Guidance** – self-explanatory
- **Deliberate Planning Requirements** – specific guidance, to include level of planning requirement, for deliberate plans. This guidance is very similar to direction provided by the former *Contingency Planning Guidance* (CPG) document, which is now folded into the GEF.

<p>a) Critical Partners³¹</p> <ol style="list-style-type: none"> 1. Countries or organizations that are direct recipients of U.S. security cooperation resources 2. Cannot achieve one or more end states without engagement 3. Reflect a deliberately select group of countries or organizations 4. May be current relationships or desired future relationships 5. Partnerships must be pursued during the life of this guidance (next 2 years) <p>b) Key Supporting Partners</p> <ol style="list-style-type: none"> 1. Countries or organizations that assist a command in achieving one or more end states 2. May or may not be from the region in question 3. Provides capabilities that complement or supplement U.S. capabilities <p>c) Actors of Concern</p> <ol style="list-style-type: none"> 1. Countries or non-state actors that may or may not be potential adversaries 2. Could be from outside the AOR 3. Security cooperation and Phase 0 activities designed to assist with problems or influence behavior, counter negative influence, or set the conditions for operational success 4. Must pose a problem to a region in a direct and immediate way <p>► Key point: depending on the context, a nation or organization can fall into all three categories.</p>
--

Figure B-2: Partners and Actors

³¹ *Global Core Partners* are a related partnership that could fall into this category. A global core partner must meet five criteria: (1) it maintains a long-term, stable and dependable relationship with the U.S. or the U.S. seeks such a relationship with this country or organization; (2) it demonstrates the capacity and either the intent or long-term potential to work closely with the U.S. in providing security cooperation assistance to other countries; (3) it collaborates with the U.S., or could do so, in multiple regions to meet multiple theater or functional strategic end states; (4) it is or has the potential to become a leader, with the U.S. as a supporting partner, in promoting regional security; and (5) it possesses advanced defense capabilities or has the potential to develop them.

The JSCP provides guidance to the CCDRs and the Joint Chiefs of Staff to accomplish tasks and missions based on current military capabilities. The last two JS�Ps have undergone a substantial transformation from earlier versions in order to more accurately reflect the dynamics of ongoing conflicts and changes in strategic guidance dissemination (see Figure B- 3. JS�P Organization). While still providing the combatant commands specific planning guidance necessary for deliberate planning, the JS�P shifted away from the previous construct of 12 priority plans and now:

- Translates strategic policy end states from the GEF into military campaign and deliberate plan guidance for combatant commanders (CCDRs).
- Expands guidance to include global defense posture, security cooperation, and other steady state activities.

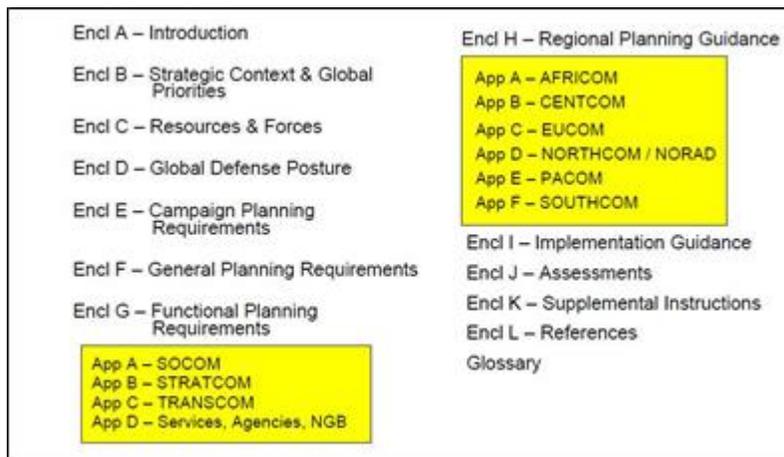


Figure B-3. JS�P Organization

Categories of Combatant Command Plans

<i>Types of Plans</i>	<i>Purpose</i>
Campaign Plans	Implement combatant commanders' theater or functional strategies. Govern day-to-day, foundational activities of the relevant commands, and typically focus on conflict prevention, theater posture, readiness to mitigate disasters, and/or preparation for responding, should disaster strike or prevention efforts fail.
CONTINGENCY	Top-Priority Contingency Plans
	Lesser-Priority Contingency Plans
Plans common to all combatant commands or commander-directed plans	All combatant commanders are responsible for producing plans for Humanitarian Assistance/Disaster Response (HA/DR), and for Non-combatant Evacuation Operations (NEO), etc. In addition, commanders may elect to task their staffs to conduct prudent planning.
The President of the United States approves contingency planning guidance.	
SecDef retains final approval authority for all plans, except the last category listed above.	

Figure B-4. Types of Plans

Levels of Planning Detail for Contingency Plans

Planning Detail	Requirement
Level - 4 (OPLAN*)	Complete plan with all annexes and detailed TPFDD**
Level - 3 (CONPLAN***)	Base plan with selected annexes (A, B, C, D, J, K, S, V, Z) A “transportation feasible” TPFDD may also be required
Level - 2 (CONPLAN***)	Base Plan / Strategic Concept
Level - 1	Concept of Operation / Course of Action

* OPLAN is short for Operation Plan and is synonymous with Level-4 planning
 ** If required to execute the plan (e.g., certain strike plans may not require TPFDDs)
 *** CONPLAN is short for Concept Plan

Figure B-5. Levels of Plans

- Classifies the JSCP as “Secret”—earlier JSCPs were “Top Secret (TS)”—and establishes separate TS JSCP annexes for sensitive planning scenarios. Nuclear planning guidance is in a separate CJCSI.

CCDRs can be tasked to develop different categories of plans (see Figure B- 4) to varying degrees of detail (see Figure B-5). The most recent JSCP has seen an increase in both quantity and level of plans tasked for development.

One aspect of the current JSCP that differs from earlier versions is the force apportionment construct. Earlier JSCPs contained tables which apportioned forces to specific plans—a configuration that was adequate for the pre-GWOT force structure. The current JSCP, however, seeks to mitigate the realities of the post-9/11 environment of increased optempo by apportioning forces based upon the knowledge of current and projected force deployments



Figure B-6. Force Apportionment

in support of ongoing operations. Forces are grouped into one of three apportionment bins (see Figure B-6). Bin “A” contains forces committed to ongoing operations. Bin “B” contains forces reasonably expected to be available for planning, and the remaining Bin contains forces apportioned for Homeland Defense planning. The classified document Global Force Management Implementation Guide (GFMIG) provides planners with Service apportionment tables grouping forces (both active and reserve) into these respective force bins. If a combatant command’s deliberate planning determines it requires forces from Bin “A,” the combatant commander must address this unsourced requirement with the SecDef. Also note in Figure B-6 that Bin “B” contains two sub-categories of forces available for planning, those that are “not readily available” and those that are “readily available.” As one might expect, units falling into the former category are in a degraded readiness posture for any number of reasons and will take time to attain a deployable status.

Global and Theater Campaign Plans

Perhaps the greatest change created by the FY 2008 GEF / JSCP guidance is the requirement for CCDRs to develop campaign plans in support of their theater (or functional) strategies. The intent of the campaign plan is to “operationalize” CCDRs’ strategies and to transition planning from a “contingency–centric” focus to a “strategy-centric” design, with an eye towards identifying all steady-state force and resource requirements.

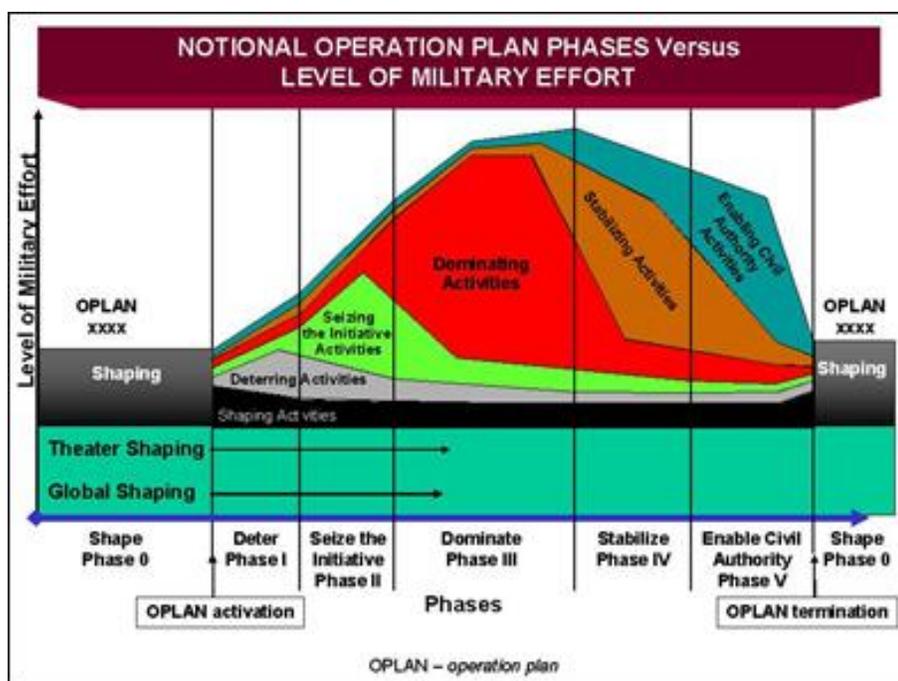


Figure B-7. Phasing Construct

While CCDRs have been given latitude in how the campaign plan might be constructed, they are expected to include:

- A comprehensive integration of steady-state activities (security cooperation and other shaping activities) with the “Phase 0s” of combatant command deliberate plans. Remembering that “Phase 0” refers to joint operational plan phasing construct (see

Figure B-7) shaping activities (military and interagency) performed to dissuade or deter potential adversaries and to assure or solidify relationships with friends and allies.

- Theater posture plans as annexes to the theater campaign plans.
- Deliberate plans which become “branches” to the campaign plan.
- Identification of Supporting “force providers,” that is, Services, certain FCCs, and select defense agencies and field activities, which will develop campaign support plans.

As the title implies, global campaign plans likely impact multiple theaters; therefore, GCCs must develop subordinate plans in support of the global campaign plans. These subordinate plans are then embedded in the GCCs’ own theater campaign plan (see Figure B-8).

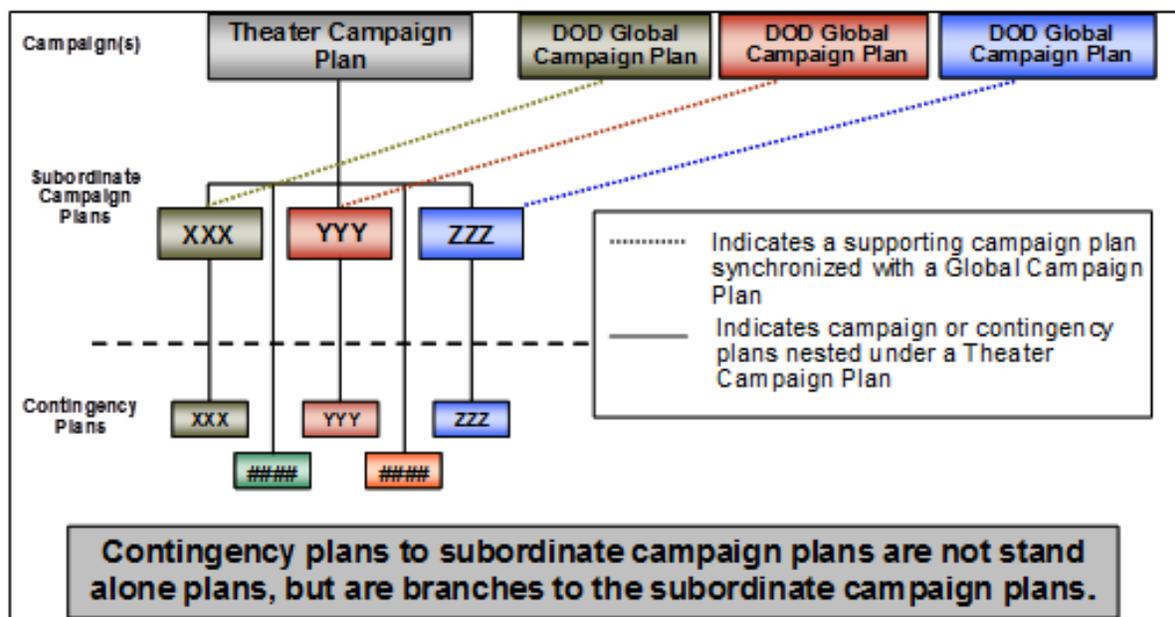


Figure B-8. Relationship of Global Campaign Plans with Theater Campaign Plans

Since a CDR’s theater campaign plan “operationalizes” the commander’s theater strategy, one should expect to find a theater campaign plan containing the following common characteristics as seen in Figure B-9. First and foremost, the plan should flow from the commander’s strategy.

This first expectation could be problematic. A CDR may choose to publish an unclassified strategy, which could deprive the strategy of the clarity found in unvarnished concerns and expectations—sharpness that would likely prove useful to campaign planners. Theater commanders’ strategies, however, have an audience that is broader than their planning staff. Communicating a strategy to regional partners and adversaries (much like the unclassified

National Security Strategy and National Military Strategy) has its own intended outcomes. As such, the commander's classified theater campaign plan will likely require a bit of "reverse engineering" to ensure the commander's end states and strategic objectives are free of ambiguity.

While each combatant command's campaign plan may approach the task differently, ultimately, a GEF directed theater campaign plan will address (for geographic commands) the commander's area of responsibility (AOR) in an interconnected manner and seek to avoid a myopic focus on one or two stove-piped deliberate plans. While as indicated above, JSCP directed deliberate plans must be linked to the campaign plan, they are addressed as branch plans in the event of campaign plan "failures." One aspect of the theater campaign plan



Figure B-9. Generic Theater Campaign Structure

which should support greater cohesion is the requirement to more closely integrate security cooperation objectives into the theater campaign plan. In theory, the very nature of many security cooperation activities, which often span multiple objectives and outcomes, will assist in the campaign plan's goal of a cohesive framework.

Mission Analysis in Deliberate Planning.

As noted above, the GEF and JSCP will provide the primary sources for Mission Analysis. There are, however, other sources of strategic guidance (see Figure B-11) which may apply to a deliberate planning activity.

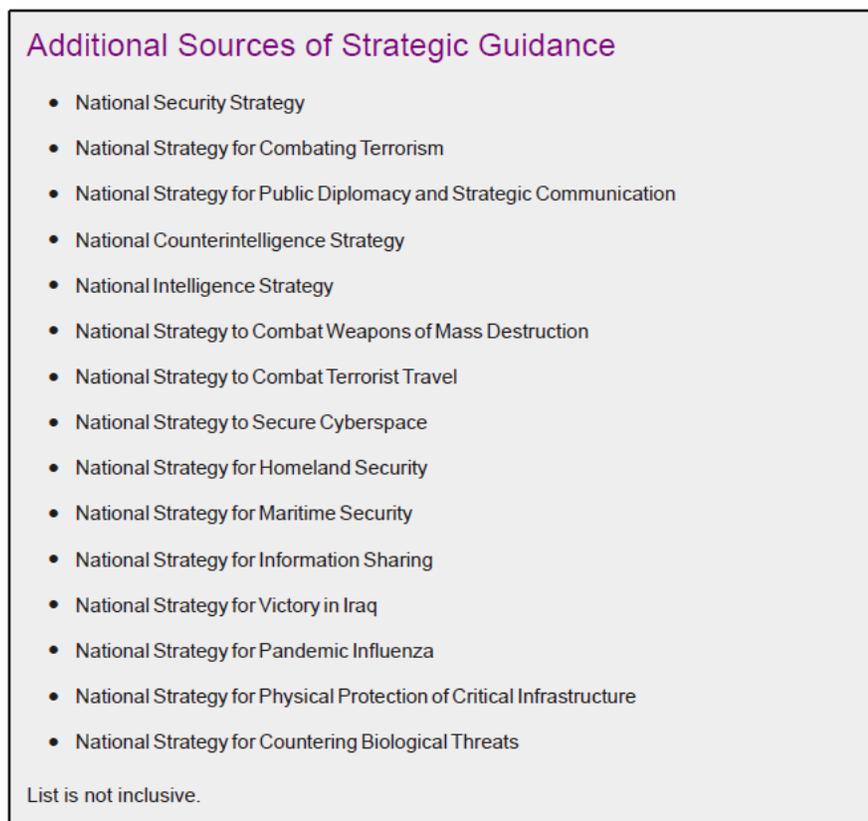


Figure B-11. Other Sources of Strategic Guidance.

While both the GEF and JSCP will provide planning assumptions, the iterative In-Progress Review (IPR) process with the Secretary of Defense (SecDef) (See Figure B-12) could provide additional assumptions, facts, or modifications to those stated in earlier strategic directives. Since the threat being planned against in deliberate planning may be ill-defined, the intelligence staff's development of adversary's COG and potential courses of action will likely suffer from the degree of specificity expected in CAP.

If the plan being developed is a regional Theater Campaign plan, the combatant commander's theater strategy, along with the region's various U.S. Missions' Mission Strategic and Resource Plans (MSRPs) would be important documents for informing the Mission Analysis process.

Depending on situation familiarity or the complexity of the planning required, the commander or planning team may wish to use the *Design* methodologies (See Appendix D). The remainder of the Mission Analysis in deliberate planning remains similar to Chapter 2 of this workbook, except that, the full Joint Planning and Execution Community (JPEC) will likely be involved during this and later steps and the CCDR would use the results of the Mission Analysis as the basis for the IPR-A discussion with the SecDef (See Figure B-12). IPR –A briefing should include discussion on the following:

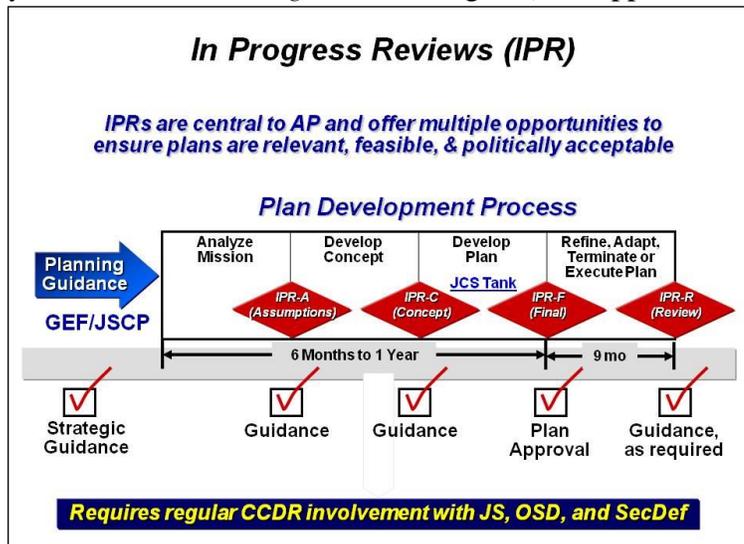


Figure B-12. IPR

- a. An assessment of the Operational Environment (OE) including a review of the adversary, friendly, and neutral actors, as well as the political, military, economic, social, information, and infrastructure elements impacting planning and influencing COA development.
- b. A definition of the problem facing the Joint Force Commander (JFC).
- c. Review of specified end states and the CCDRs proposed termination criteria.
- d. Critical assumptions upon which the plan is based. Some of these are provided in the national level planning guidance and others will be developed by the CCDR to establish the conditions required to successfully execute the plan.
- e. The risk associated with the required assumption failing to become fact prior to or during plan execution should also be discussed.
- f. Essential tasks (both specified and implied) used to derive the mission statement.
- g. Operational limitations.
- h. Proposed mission statement.
- i. Commander's initial operational approach – description of the anticipated broad actions the force must take in order to achieve the desired end state.
- j. Necessary IA/multinational input to facilitate further plan development.

IPR-A results in an approved Mission statement and approved assumptions.

2. Course of Action (COA) Development in Deliberate Planning.

COA development during deliberate planning is nearly identical to CAP as outlined in Chapter 3 of this workbook. Since planners will have more time to develop COAs during

deliberate planning, one should expect to consider more COAs as well as more assumptions. In addition, transportation feasibility assessments of each COA are integral to this step, though force flow timelines are less certain than in CAP. Unless otherwise specified, planners will use apportioned forces from the GFMIG Bin “B” as outlined in Figures B-6 and 7 to source COAs being considered, remembering that force availability changes on a frequent basis.

3. Course of Action (COA) Analysis (Wargaming) and COA Comparison in Deliberate Planning.

The processes of these two JOPP steps are nearly identical to those found in CAP. If the plan being developed is more functional in nature or the threat is ill-defined (for example, an HA/DR or FON CONPLAN) it may be difficult to wargame the plan in the classic force on force sense. However, the planning team will still need to analyze the key features of the various concepts to ensure that the COA being considered passes the tests for validity (adequate, feasible, acceptable, distinguishable, and complete). The CDR would use the results of the COA Analysis and Comparison as the basis for the IPR-C discussion with the SecDef (See Figure B-12). During the IPR-C briefing the commander broadly outlines how forces will conduct integrated, joint operations to accomplish the mission. Among other elements and as appropriate, the IPR-C should include discussion on the following:

- a. Review of the strategic guidance, assumptions, termination criteria, and mission statement as well as any changes/modifications.
- b. Review of the OE and a succinct description of opposing forces’ intent and their most likely and most dangerous feasible COAs.
- c. Recommended COA describing the commander’s operational approach. The COA should include the elements of operational design as appropriate and a discussion of:
 - 1) Objectives.
 - 2) Key tasks.
 - 3) Task organization and major capabilities required.
 - 4) Main and supporting efforts.
 - 5) Options within the COA that describe activities that may be executed to help achieve an objective. The COA should integrate a series of options that demonstrate how the command will rapidly transition as conditions change through the campaign or operation.
- d. Descriptions and assessments of alternate COAs and the rationale for not recommending them.
- e. Identification of branches and sequels that require future development.
- f. IA/multinational coordination accomplished to date, and identification of IA/multinational tasks requiring OSD coordination.
- g. Required ally/partner nation support to mitigate U.S. Capability gaps.

- h. Initial assessment of the level of risk associated with the concept and a review of the risks if the assumptions become invalid.

During Global or Theater Campaign Plan IPR-C, the CCDR should also include:

- a. A discussion of steady-state activities alignment with wider USG policy and activities.
- b. A concept of how the CCMD will measure plan achievement of IMO and progress toward global/theater end states.
- c. Transition to full Time-Phased Force and Deployment Data (TPFDD) development, in support of level 3T and level 4 plans, is marked by approval of a COA and/or plan concept.
- d. Initial Logistics Supportability Analysis (LSA) work will begin, for level 3T and above planning, during COA selection and be complete by the time the written plan is ready for initial Joint Planning and Execution Community (JPEC) review prior to IPR F. For level 3T and above planning, the LSA will be presented to the Director for Logistics, the Joint Staff (DJ-4), as part of JPEC review and Joint Combat Capability Assessment (JCCA) plan assessments.

IPR-C results in an approved Concept.

4. Plan Development in Deliberate Planning.

Plans are prepared in accordance to the JSCP directed level of plan (See Figure B-5) and the formats found in CJCSM 3122.03 JOPES Vol. II (being replaced by CJCSM 3130.03 APEX).

During IPR-F, the CCDR should brief the concept of deployment (strategic movement and maneuver) and concept of operations as well as address issues that arose during plan development (e.g., key risks, decision points). The intended result of IPR-F is SecDef understanding of the plan's ends, ways, means, and risk resulting in approval of the basic plan and required annexes, the resolution of any remaining key issues, and approval to proceed with plan execution and assessment (if applicable) with any amplifying guidance or direction. Other considerations during plan development:

- a. Prior to IPR F, the CCDR, staff, subordinate commanders and directors of supporting agencies (as appropriate for the level of plan being conducted) conduct deployment, employment, logistics, and sustainment planning; force contingency sourcing in coordination with the Joint Force Providers (JFP) and Military Departments as directed; comprehensive feasibility analyses; and other actions pursuant to guidance and direction received at other DOD IPRs.
- b. CCDRs planning with forces beyond what contingency sourcing can provide must identify those forces to the JS J-5/JOWPD, J-8 (Forces Division), and OUSD (P) Plans. This will enable senior leadership to better understand the competing

- demands to the Quadrennial Defense Review and associated risk assessments that may result in the development of mitigation options or adjustments to strategic priorities.
- c. The result is the production of the appropriate JSCP prescribed planning level product (level 1-4). All plans will include planning for cyber activities in the base plan and include the appropriate areas of consideration identified as general planning guidance in the JSCP. Level 3 concept plans (CONPLAN) and level 4 operation plans (OPLAN) should contain Annexes A, B, C, D, J, K, R, S, V, W, Y and Z and address areas such as IA, strategic communication (SC), and security cooperation activities. Level 4 plans and some designated level 3 plans will also have TPFDDs. Deviations will be highlighted to senior OSD and JS leadership during IPR socializations.
 - d. When complete, the CCDR submits the plan summary, base plan, and required annexes to the CJCS for JPEC - comprised of headquarters, commands, and agencies that control some aspect of joint operations to include JS, the Services and their major commands, CCMDs and their Service components, sub-unified commands, and combat support agencies (CSAs). For level 3T and above planning, the LSA will be presented to the DJ-4 as part of JPEC review. Subordinate Campaign Plans (SCP) that undergo a JPEC review will be reviewed and endorsed by the respective Global Synchronizer for planning. Once complete, the Global Synchronizer will endorse the plan via a letter to the SecDef routed through J-5/JOWPD, ensuring the alignment of specified planning and related activities.
 - e. Following JPEC review, the CCDR will present the plan to the CJCS in a JCS Tank before briefing the plan to the SecDef in IPR-F. One of the main purposes of the JCS Tank is to have a detailed conversation with the CJCS and Services on the plan's force requirements. Force requirements that should be informed by the results of the contingency sourced Force Flow, Transportation Feasibility, and Logistic Conferences. J-5/JOWPD will coordinate a date on behalf of the CCDR with the DJS front office. For GCPs/TCPs, J-5/JOWPD may also coordinate socialization briefs to the Services prior to the briefing to the JCS Tank.
 - f. After the JPEC review and JCS Tank review, the CCDR will present the plan to the SecDef for approval at IPR.
 - g. During GCP/TCP IPR F, the CCDR should include an overall assessment of the command's ability to accomplish Intermediate Military Objectives (IMOs) and a timeline for accomplishment. Furthermore, CCDR's should present progress toward the accomplishment of global/theater end states and describe how the CCMD measures this progress and achievement of IMOs.

The shelf-life of a deliberate plan is quite short. While the JSCP will generate a new planning cycle every two years, plan maintenance should be scheduled on a more frequent basis to maintain some degree of currency the ever changing nature of Ends, Ways, and Means.

APPENDIX C: Center of Gravity Determination

While primarily a strategic and operational level concern, the identification of both the adversary and friendly centers of gravity is an essential element of any plan. If the staff gets this part wrong, the operation will at best be inefficient and, at worst, end in failure. Joint planning staffs should be deeply involved in a dialogue with the higher joint force headquarters planning staff during this critical analysis. While tactical-level organizations may not be party to the formulation of a COG analysis, they most certainly will be participants in the execution of the resulting tactical objectives and tasks that are derived from the analysis. Therefore, even tactical commanders and their planning staffs should be familiar with the process and reasoning used for the COG analysis in order to place their own operations in the proper context.

The purpose of this appendix is to provide the planner with a brief review of each of the information requirements required in COG identification and deconstruction. This appendix is not intended to replace the extensive study of the nuances of COG analysis that all planners should strive to master; rather, it is intended to identify information requirements and to offer some considerations in the application of the collected data. The reader will note that the JOPP has the staff collecting information for both the adversary and friendly COGs. Neither can be identified nor considered in a vacuum—a common staff planning mistake. The struggle between opposing forces employing their unique means and ways to achieve their respective ends (objectives) is a dynamic that can only be appreciated if they are viewed collectively. While the explanations and examples provided below are for adversary COG analysis, the process is the same for determining and analyzing friendly COGs. The only differences are in the planning actions taken once the analysis is completed. Planners develop courses of action that focus on defeating the adversary's COG while at the same time mitigating risks to their own COG.

Figure C-1 illustrates the flow used to identify a COG and to determine the ways in which it can be attacked. Each step of the process, as it corresponds to the numbers in Figure C-1, is described below. Later in this appendix an example, Desert Storm Adversary COG Analysis, is provided in Figure C-6. Figure C-7 takes the COG analysis Desert Storm example and traces its direct influence upon subsequent tactical tasks provided to maritime forces. This Desert Storm example is followed by a hypothetical sea control example in paragraph C-9.

1. IDENTIFY THE OBJECTIVE(S)³²

Identifying the objective is a critical first step. Before one can determine a COG, the objective(s) must be identified. If this portion of the analysis is flawed, then the error infects the remainder of the process. The planner should first determine the ultimate (strategic or operational) objectives and then the intermediate (operational or major tactical) objectives. The operational objectives should show a direct relationship to the strategic objectives. If this linkage between strategic and operational objectives cannot be established, the objectives are

³² JP 5-0, *Joint Operational Planning* provides a more in-depth review of operational art and the relationship of objectives and centers of gravity.

suspect. Objectives, and particularly strategic objectives, usually have requirements/tasks that fall primarily into the responsibility of instruments of power other than the military. These are still important to identify since the military may have a supporting role in their accomplishment.

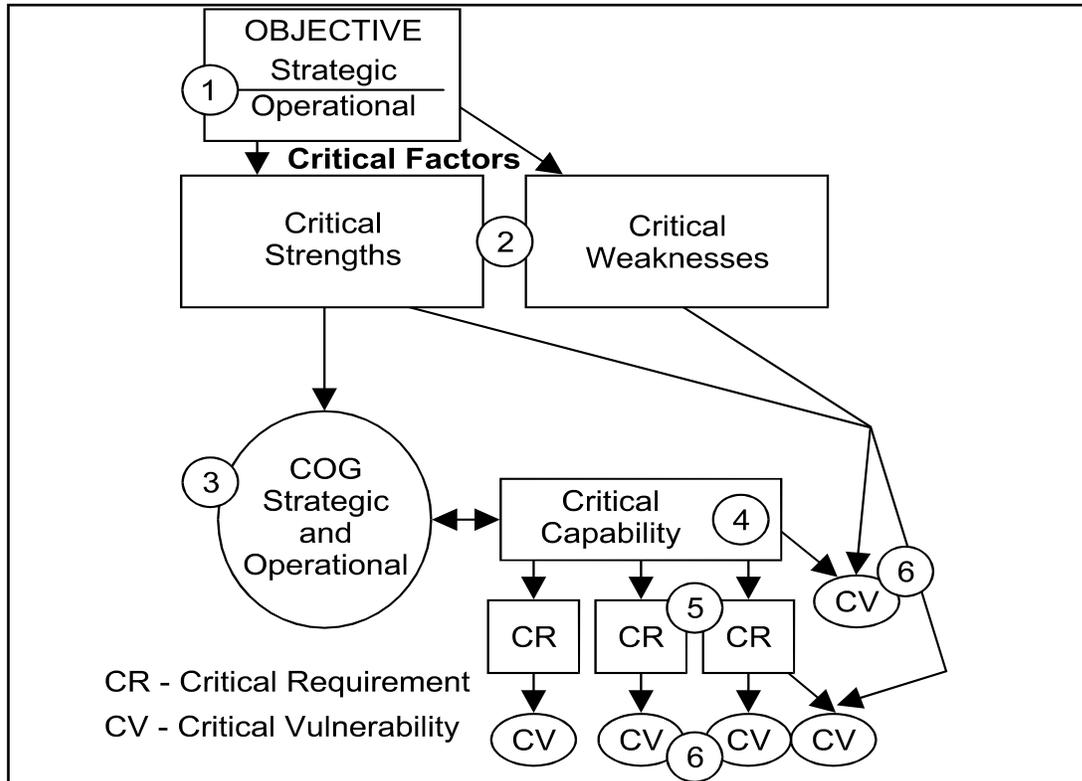


Figure C-1. Center of Gravity Flow Chart

2. IDENTIFY CRITICAL FACTORS

Critical factors are those attributes considered crucial for the accomplishment of the objective. These factors that in effect describe the environment (in relationship to the objective) must be identified and classified as either sufficient (critical strength) or insufficient (critical weakness). Critical factors are a cumulative term for critical strengths and critical weaknesses of a military or nonmilitary source of power; they can be quantifiable (tangible) or unquantifiable (intangible); critical factors are present at each level of war; they require constant attention because they are relative and subject to changes resulting from the actions of one's forces or of the adversary's actions. It is important while conducting the analysis for this step that planners maintain a sharp eye on the objectives identified in the first step—each level of war has critical factors that are unique to that level. The questions that should be asked when determining critical factors for the adversary are, “What are the attributes, both tangible and intangible, that the adversary has and must use in order to attain his strategic (operational) objective?” These are critical strengths. The second question is, “What are the attributes, both tangible and intangible, that the adversary has and must use in order to achieve his strategic (operational) objective, but which are weak and may impede the adversary while attempting to attain his objective?” These are critical weaknesses. The

answers to these two questions will produce a range of critical strengths and critical weaknesses associated with specific levels of war. One should note that, like the close relationship expected to be found between strategic and operational objectives, there will undoubtedly be some critical strengths and critical weaknesses that have a similar close relationship between the corresponding critical factors. For example, a strategic critical weakness, such as a strategic leader having a tenuous communications link to his fielded forces, may also create an operational critical weakness for fielded forces unable to reliably communicate with their higher command.

The more discrete that planners are in determination of critical factors the more focused the resultant courses of action can be. At the operational level of war, particularly in a force-on-force scenario, the operational center of gravity will typically be a physical force. Therefore, when listing critical strengths planners must be as discrete as possible. For example, instead of simply listing an adversary critical strength as “naval forces,” parse naval forces into clear-cut critical strengths such as: “submarines, ASCM equipped surface combatants, etc.” This will allow for identification of a more discrete adversary COG (in Step 3). Doing this will also allow for easier discrimination of some critical weaknesses in those “naval forces” such as: “inability to conduct over-the-horizon targeting at sea, underway replenishment, etc.”

3. IDENTIFY THE CENTERS OF GRAVITY

Joint doctrine defines a COG as “The source of power that provides moral or physical strength, freedom of action, or will to act.” The importance of the COG concept in the JOPP is that it is directly linked to courses of action development. While COGs are critical strengths that actually accomplish objectives at specific levels of war, courses of action must be focused on defeating the adversary COG(s) and protecting the friendly COG(s) that have been identified.³³

While the joint definition is helpful for assisting in the identification of the operational COG, when considering the strategic COG, a planner should be alert to the fact that the definition is not focused upon only the military aspects of the analysis. In view of the discussion in the first step, when strategic objectives are being identified planners should consider the broader application of the definition, remembering that the role of instruments of power other than the military may prevail.

The COGs at each level of war should be found among the listed critical strengths identified within the critical factors of Step Two. While all of the identified strengths are critical, the planner must deduce which among those capabilities identified rise(s) above all others in importance in accomplishing the objective (that is, those tangible and intangible elements of combat power that would accomplish the assigned objectives)—this critical strength is the COG. A method to do this somewhat analytically is to take each critical strength and specifically ask the question: Does this critical strength accomplish the objective? If the

³³ Planners should note that COG can also be considered similarly for natural disaster/epidemic phenomena. A good example would be Malaria/Yellow Fever mitigation actions, the stated objective, during the building of the Panama Canal. Mosquitos were determined to be the carriers of the disease and thus can be considered Malaria/Yellow Fever’s COG. Once the mosquitos were nearly eradicated in the Canal Zone, deaths from Malaria/Yellow Fever were tremendously reduced to negligible, thus allowing canal construction to proceed.

answer is that it does not accomplish the objective but only assists in accomplishing the objective, it is probably a critical capability or critical requirement but NOT the COG.

For example, if the adversary has an operational objective to “seize island X” and the planners have identified some adversary critical strengths as: “carrier air power, sustainment forces, and the landing force” the planners should ask: “Does carrier air power seize island X?” The answer is obviously no, but carrier air power is instrumental in providing air superiority over the island. Therefore, carrier air power is not the adversary COG but may prove to be a critical capability or critical requirement. Next ask: “Do the sustainment forces seize island X?” The answer is obviously no, but they are instrumental in keeping the landing force operational. Therefore, the sustainment forces are not the adversary COG but may prove to be a critical capability or critical requirement. Next ask: “Do the landing forces seize island X?” The answer is yes which makes the landing forces the adversary COG. This does not diminish the importance of the other critical strengths; however, it forces the planner to examine closely the relationships of the various critical strengths to one another and the objective.

This close examination of interrelationships could be improved by using a systems perspective of the operational environment. Such a study may well offer the planner an enhanced understanding of an adversary’s COG and its interdependencies. See JP 5-0 for more information on the systems approach to COG refinement. This analysis of these relationships will prove important in the next step.

4. IDENTIFY CRITICAL CAPABILITIES

Joint doctrine defines a critical capability as “a means that is considered a crucial enabler for a COG to function as such and is essential to the accomplishment of the specified or assumed objective(s).” (JP 3-0) (See Figure C-2.) If the COG is a physical force (often the case at the operational level), the commander and staff may wish to begin their examination of critical capabilities by reviewing the integration, support, and protection elements of the adversary’s combat power as they apply to the COG. Many of these elements are often found in the joint functions as described in the Universal Joint Task List (C2, intelligence, sustainment, protection, fires, and movement and maneuver). Moreover, these capabilities often are located within the critical strengths and weaknesses identified in Step Two. The planner should be alert for two major

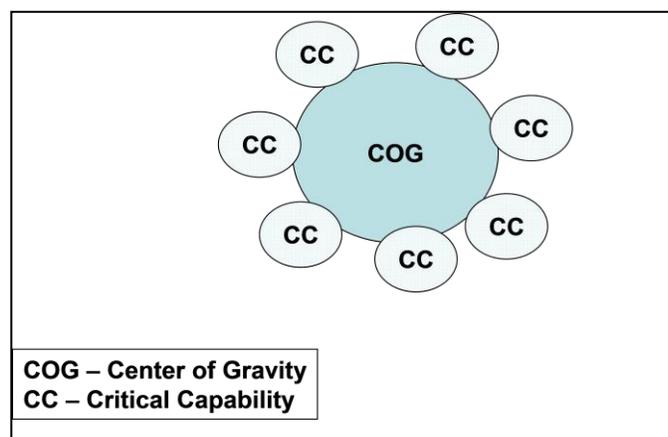


Figure C-2. Center of Gravity (COG) is enabled by Critical Capabilities (CC)

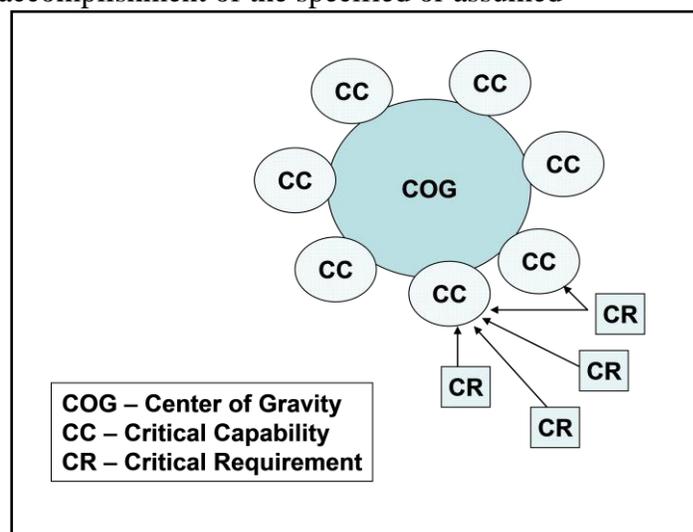


Figure C-3. Critical Capability is composed of Critical Requirements (CR)

considerations. First, although a capability is a critical strength, if it bears no relationship to the identified COG, it cannot be considered a critical capability. The second consideration is that although some capability may be perceived as a critical weakness, if it is an essential enabler for the adversary COG, then it is a critical capability, albeit weak in nature. An example of this phenomenon could be the same communications circumstance offered earlier in Step Two. A critical capability for an operational COG to accomplish its mission might be its ability to exert C2—its ability to receive direction as well as communicate directives to subordinates. The fact that this capability has been deduced to be a weakness does not diminish its importance to the COG for accomplishment of its assigned mission. This insight of a capability’s weakness is applied at a later step.

5. IDENTIFY CRITICAL REQUIREMENTS

Once a COG’s critical capabilities are identified, the next step is for the staff to identify those essential conditions, resources, and means for a critical capability to be fully operational (see Figure C-3). These are the critical requirements that support each of the critical capabilities. This is essentially a detailed view of what comprises a critical capability. Using the C2 example as a critical capability, the critical requirements might include tangible requirements such as: communication nodes, antennas, frequency bands, individual command posts, spare parts, bandwidth, specific satellites, etc. It may also include intangibles such as commander’s perceptions and morale.

Planners should be cautious at this point. One is presented with a wealth of potential targets or tasks as each critical capability is peeled back and the numerous supporting critical requirements are identified. There is often a temptation to stop at this point of the analysis and begin constructing target lists. Such an action could result in a waste of resources and may not be sufficient to achieve the desired effects. The planner should find the sixth step as a more effective way to achieve the defeat of a COG.

6. IDENTIFY CRITICAL VULNERABILITIES

Joint doctrine defines a critical vulnerability as “an aspect of a critical requirement which is deficient or vulnerable to direct or indirect attack that will create decisive or significant effects.” (JP 3-0) (See Figure C-4.) The planner should contemplate those critical capabilities and their supporting critical requirements in this regard, keeping in mind that these weaknesses must bear a direct relationship to a COG and its supporting critical capabilities for it to be assessed as a critical vulnerability. Striking a weakness that bears no such relationship is simply a measure taken to harvest “low hanging fruit” that offers no decisive benefit. The planner should also take this opportunity to

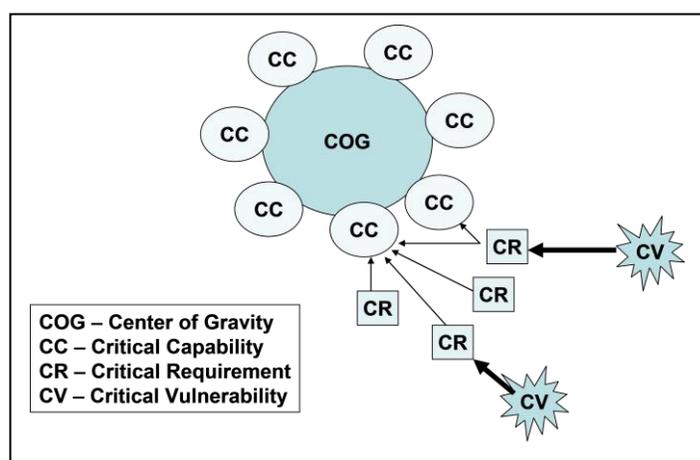


Figure C-4. Critical Requirement (CR) may be composed of Critical Vulnerabilities (CV)

consider the previously assembled lists of critical strengths and critical weaknesses from Step Two to determine if there are any critical factors with a close relationship to the COG that were not captured in the previous critical capability/critical requirement steps (steps four and five).

While the planner first seeks critical weaknesses within the critical capabilities and

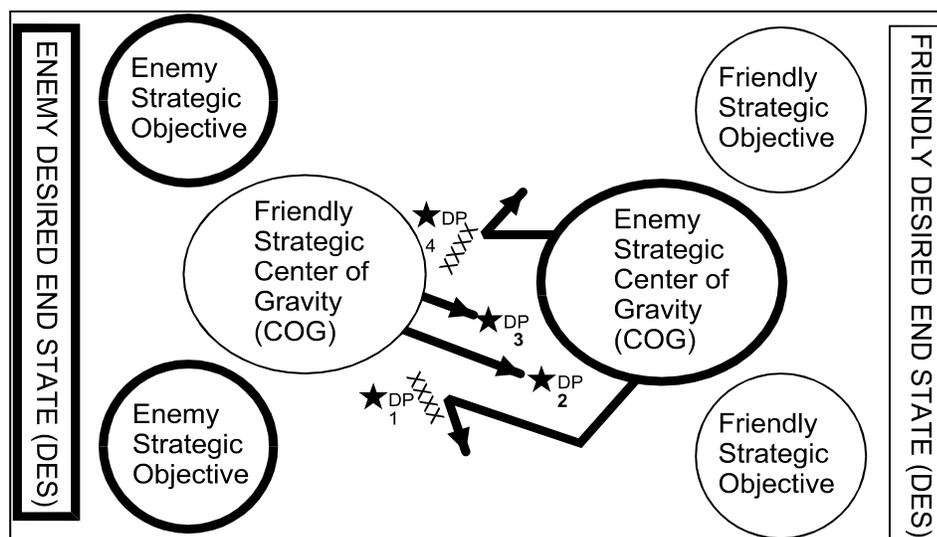


Figure C-5. Theoretical relationship of two opposing COGs and their Decisive Points (DP)

supporting critical requirements as implied by the definition, there might be opportunities found in critical strengths that provide decisive or significant results disproportionate to the military resources applied. An example might be the integrated air defense system (IADS) that is protecting an operational COG. While this critical capability might be assessed as a strength, its neutralization and the subsequent opening of the COG to direct attack may be assessed by the commander as more favorable in regard to the amount of resources and time expended to achieve the desired effects.

7. IDENTIFY DECISIVE POINTS

Though not reflected in Figure C-1, identification of decisive points remains an important feature of the COG analysis and its subsequent defeat or neutralization. Joint doctrine defines decisive points as “a geographic place, specific key event, critical factor, or function that, when acted upon, allows commanders to gain a marked advantage over an adversary or contribute materially to achieving success.” (JP 5-0) As with all previous steps, the value of a DP is directly related to its relationship to a COG and its objective (see Figure C-5). In the example shown in Figure C-5, from a friendly COG perspective, DPs 1 and 4, which provide access to the friendly COG, must be protected from attacks by the adversary COG. Decisive Points 2 and 3, which provide decisive access to the adversary COG, become friendly objectives or tasks. If there is no relationship, it is not a DP. A DP is neutral in nature; that is, it is by definition as important to both the adversary and friendly commanders. If, for example, an APOD/SPOD complex is a DP for a friendly commander, enabling that commander to project the COG through it on the way to the objective, then the adversary commander will also assess the complex as a threat to the adversary COG and should attempt to deny the friendly force commander control of the DP. In both cases, this DP, if within the capability of the force, will undoubtedly become an objective or task assigned to both

adversary and friendly subordinate commands. Failure to do so becomes an identified risk to one's COG. For the tactical commander and staff, operational-level DPs invariably translate into tactical objectives and/or tasks. Using the APOD/SPOD DP example mentioned above, one might find the friendly joint force commander assigning the JFMCC the tactical task of "Seize Redland SPOD NLT D+2 in order to support the flow of JTF Blue Sword forces into Redland."³⁴

The planner must remember that this is a dynamic process. Any changes in the information considered in the first two steps of this process require the staff to revalidate its conclusions and subsequent supporting operations. As objectives change, the sources of power required to achieve the desired end state might also change. As new sources of strength appear in the operational environment, how do they interact?

Figure C-6 provides an example adversary COGs analysis using the worksheet provided in Appendix R (note that the same must be done for the friendly COG to ensure measures are taken to protect one's own COG). This Desert Storm example is not intended to be exhaustive and serves only as an illustrative example, exploring only a single critical capability and its associated critical requirements, and offering simply a selection of DPs.

Identify the Adversary Desired End State (DES)

Increased Iraqi economic and military stature in the region with Saddam Hussein's regime firmly in power and Kuwait under Iraqi control.

Determine the Adversary Center of Gravity

1a. Strategic Objective(s)

- *Retain Kuwait as 19th province*
- *Enhance Saddam Hussein's hold on power*
- *Increase Iraq's political and military influence in the Arab world*
- *Increase Iraq's power and influence within OPEC*

1b. Operational Objective(s)

- *Defeat or neutralize a coalition attack to liberate Kuwait*
- *Prevent coalition forces from obtaining air superiority*
- *Prevent coalition forces from obtaining sea control in the northern part of the Persian Gulf*

³⁴ Planners should remember that decisive points might not always be physical in nature. They could functions or key events, such as gaining maritime superiority or support of the local populace. In non-combat situations, such as a disaster response, a decisive point could be accessing stagnant bodies of water where mosquitoes breed in order to treat and/or drain them to prevent the spread of disease.

2a. Critical Strengths

- *Integrated air defense system (IADS)*
- *Chemical weapons*
- *land-based ballistic missiles (scuds)*
- *Republican Guards in the Kuwait theater of operations (KTO)*
- *forces are in defensive positions*
- *Saddam and his strategic C2*
- *combat experienced units and commanders*
- *missile-armed surface combatants*
- *sea mine inventories and delivery platforms*

2b. Critical Weaknesses

- *long and exposed land LOCs from Iraq to KTO*
- *world opinion; Arab world outrage*
- *combat skills and readiness of the Air Force*
- *numerical and qualitative inferiority of naval forces*
- *low morale and poor discipline of regular forces*
- *class IX for weapon systems*
- *inadequate forces to protect the Iraq-Iran border*

3a. Strategic Center(s) of Gravity

Saddam and his inner-circle security apparatus

3b. Operational Center(s) of Gravity

Republican Guards in the KTO

4. Critical Capabilities

- *sustain Republican Guard forces in KTO (Log)*
- *receive strategic direction and provide directives to subordinate units (C3)*
- ***protect forces from coalition airpower***
- *employ conventional defensive forces as a screening force*
- *maintain organizational morale*

5. Critical Requirements (per the example IADS)

- *radar sites*
- *communication nodes*
- *Iraqi Air Force*
- *resupply of class IX for IADS*
- *resupply of class V for IADS*
- *morale of fixed site crews*

Figure C-6. Desert Storm Adversary Centers of Gravity Analysis (for the sake of brevity, this example only examines the single critical capability of IADS) (Sheet 1 of 2)

6. Critical Vulnerabilities

- *radar sites*
- *Iraqi Air Force*
- *Resupply of class V and IX for IADS*

7. Decisive Points (note: not exhaustive)

- *APODs & SPODs in Saudi Arabia*
- *Strait of Hormuz*
- *APODs in Turkey*
- *Kuwait SPOD*

Figure C-6. Desert Storm Adversary Centers of Gravity Analysis (Sheet 2 of 2)

8. TASKS TO TACTICAL ORGANIZATIONS

While Figure C-6 offers an example of how a COG's analysis might be accomplished, the tactical-level commander and planning staff focus upon critical vulnerabilities and DPs. Critical vulnerabilities are related to a desired effect (in this case a desired effect of the exposure of the operational COG to unimpeded direct attack by air). Decisive points are tied to both the adversary and friendly COGs. Objectives and tasks for tactical commands flow from these sets of data. Continuing with the Desert Storm example, Figure C-7 offers possible tasks for the JFMCC, NCC or subordinate commander to execute these products of the COG's analysis.

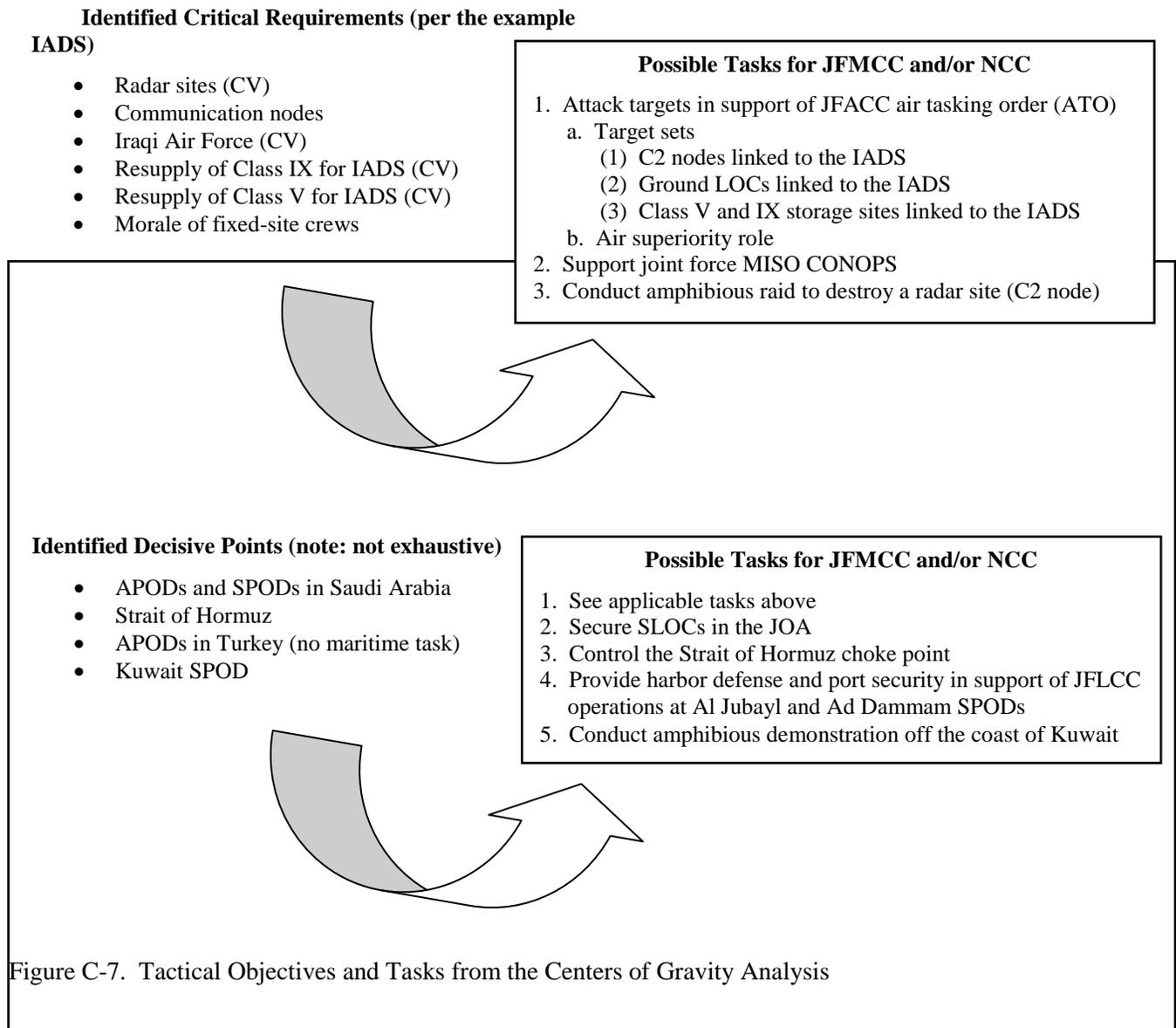


Figure C-7. Tactical Objectives and Tasks from the Centers of Gravity Analysis

9. SEA CONTROL EXAMPLE (JTF AND JFMCC)

While the previous Desert Storm example is illustrative of a land-centric operational level COG deconstruction, a close examination of a sea control scenario demonstrates the same process for a maritime-centric low operational level COG deconstruction. For the purpose of this example, consider the Redland scenario in which the JTF Blue Sword JFMCC is assigned the objective of gaining and maintaining maritime superiority in the Redland Sea. The JFMCC N-2 assesses that Redland recognizes the importance of the Redland Sea to JTF Blue Sword's operations. Redland realizes it has insufficient strength to gain maritime superiority of the entire Redland Sea; however, they do have the ability to contest JTF Blue Sword's maritime operations. As such, Redland is assessed to have embraced a sea denial objective, wishing to contest unfettered foreign maritime intrusions into the Redland Sea.

Assessed Redland Operational Objective

Sea denial —Deny JTF Blue Sword the use of territorial and adjacent seas out to maximum over the horizon range for amphibious operations and sustained carrier based air support.

Considering this objective, the JTF Blue Sword planning staff considers the Redland *critical factors* as they relate to the assessed Redland Objective of Sea Denial. What are those attributes, both tangible and intangible, that Redland will consider as crucial to achieve its sea denial objective?

The staff identifies several critical factors and separates them into two categories. *Critical strengths*, those critical factors which Redland has and must use in attaining its sea denial objective, and *critical weaknesses*, those critical factors which Redland must bring to bear, but are weak and could impede its accomplishment of the objective.

Critical Strengths³⁵

- **Surface Combatants:** 3 Frigates, 5 Corvettes, 8 Fast Attack Craft (missile), 11 Coastal Patrol Craft
- **Submarines:** 4 Kilo Submarines
- **Coastal Defenses:** under Redland Army control
- **Land based aircraft:** air superiority, ISR, ground attack
- **SS-N-25 "Switchblade" anti-ship missiles:** 27 missiles w/ 7 mobile coastal launching platforms
- **Sea mines:** estimated 450, a mixture of contact and influence
- **Forces:** Redland maritime forces are disciplined and have high morale and are familiar with their local operating area

³⁵ Ideally, the strengths and weaknesses should be developed to as much specificity as possible. For example, rather than stopping at "4 Kilo submarines," identify the unit, 3rd Submarine Squadron.

Critical Weaknesses

- **Command and Control:** Redland joint C2 is stove-piped and subordinate commands are given little latitude to make independent decisions.
- **ISR:** Redland has no Maritime Patrol Aircraft (MPA) capability.
- **Sustainment:** anti-ship missile inventory is limited. The 27 missiles support air, land, and sea based platforms.
- **Sea mines:** the mines are not yet employed; they are currently in storage sites.
- **Training:** Redland has never trained to conduct a joint sea denial operation.
 - Redland air and maritime forces have little experience in conducting operations during periods of limited visibility.

The N-2 and JFMCC planning staff then must determine: “which of these critical strengths (note, the COG would not emerge from the critical weakness list) is the COG?” Several factors play into this important decision:

- This decision cannot be made in isolation from the friendly COG. Remembering that the objective of Redland is the sea denial of JTF Blue Sword’s forces, Redland must consider what source of power JTF Blue Sword will bring to bear in order to achieve its sea superiority objective. Thus, the Redland COG must be considered in relationship to JTF Blue Sword’s COG.
- The COG may not be readily apparent at this point. If this is the case, the staff should seek to have collection resources moved to a higher priority to provide greater COG clarity.
- Parsing out a single “source of power” may be difficult if two or more of the strengths are inexorably linked together by their criticality to accomplish the objective and/or doctrinal employment (for example, this is often a challenge when considering an amphibious force—can you truly separate it from its air support, or is the air/ground team a single COG?). While in reality one of the strengths may ultimately be seen as a critical capability of the COG, leaving the two strengths joined as a COG is not in of itself wrong. Again, additional focus of collection and or analysis may offer a sharper appreciation.

Assessed Redland Operational Center of Gravity

Redland’s Kilo submarines

With the COG identified, the planning staff then turns its attention to identifying the Kilo submarines’ crucial enablers—those capabilities that facilitate the COG’s ability to accomplish its sea denial objective. These are termed *critical capabilities*.

Critical Capabilities

- **Command and Control** – the ability to direct the submarines against adversary ships and orchestrate complementary sea denial operations
- **Intelligence Surveillance Reconnaissance (ISR)** – the ability to accurately detect and provide I&W of adversary forces and supports determining where and when the submarines should be employed and against which targets
- **Sustainment** – the ability to sustain the submarine force and the supporting sea denial forces
- **Protection** – the ability to mitigate coalition anti-submarine warfare (ASW) operations
- **Fires** – the ability to provide complementary sea denial fires to maximize the submarines' effectiveness by channeling the coalition forces and adding complexity to coalition ASW operations
- **Movement & Maneuver** – the presence of suitable waterspace to conduct submarine operations

Once the critical capabilities have been identified, the N-2 staff must then examine each capability for its essential conditions, resources, and means that allows the capability to be fully operational—*critical requirements*. In some cases, a critical requirement could support more than one critical capability. Often, this detailed appreciation of critical requirement linkages will come from a close examination by intelligence analysts and targeteers. Nonetheless, the identification of critical requirements requires a deep understanding of the operational environment and an appreciation of the adversary's sea denial (in this example) employment doctrine and past experiences. The following list offers a sampling of possible critical requirements one might identify for a submarine force with a sea denial objective.

Critical Requirements

- **Command and Control** –
 - Command post locations/fusion centers
 - Communications links (physical and electromagnetic)
 - The submarines' ability to transmit/receive within these links
 - C2 structure as it relates to sea denial (who/what level has the necessary authorities to direct operations?)
- **Intelligence** –
 - Maritime patrol aircraft (MPA)
 - Human Intelligence (HUMINT)
 - Coastal Surveillance and Early Warning Radar
 - Signals Intelligence (SIGINT)
 - Use of civil shipping
 - C2 structure and communication links for passing intelligence and targeting (see Command and control critical requirements)
- **Sustainment** –
 - Storage sites for Class III, V, and IX in support of sea denial systems
 - Submarine tender
 - Ports where resupply occurs
 - Lines of Communication (LOCs) used between storage sites and resupply ports
 - Sources for international replenishment of critical classes of supply
- **Protection** –
 - OPSEC
 - Ability of submarines to rapidly sortie from bases
 - Adequate I&W of hostile threat
 - Local air superiority
 - Information Operations
 - Deception
- **Fires** –
 - Anti-ship mobile platforms
 - Known launch points, transit routes, hide locations
 - Surface fleet
 - C2 Structure (who has the authorities?) as it relates to sea denial (see ISR and C2 critical requirements)
 - ISR capabilities, authorities, and linkages to support sea denial (see ISR and C2 critical requirements)
 - Airfields that would be used by land based air to support sea denial
 - Sea Mines
 - Storage locations
 - LOCs to distribution sites
 - Distribution sites
 - Delivery platforms
 - Suitable employment environment
 - Sea bases
- **Movement & Maneuver** –
 - Suitable waterspace for submarine operations

Critical Vulnerabilities

While directly attacking the submarines is certainly the most efficient and effective way to defeat the Redland's sea denial COG, an indirect approach through *critical vulnerabilities* is often the best method to reach or expose a well-protected COG. From the list of critical requirements, the staff should consider which of these offers an opportunity for delivering a decisive or significant effect upon the four Kilo submarines. One should first consider those critical requirements that were originally identified as deficient (see critical weaknesses) since by definition they are likely vulnerable. However, even if a critical requirement might be judged as a strength, one might assess that a successful attack on the strong critical requirement would result in effects disproportionate to the military resources used against it, the commander may feel it is worth the expenditure.

In this example, three of the identified critical weaknesses bear closer examination as possible candidates for critical vulnerabilities.

- The Redland stove-piped C2 has related critical requirements which influence the critical capabilities of command and control, ISR, and fires (and likely others). The potential of assessing this as a critical vulnerability to disrupt and perhaps expose Redland submarine operations seems reasonable for further examination.
- The lack of Redland MPA, coupled with the above mentioned ISR critical vulnerability, could further weaken Redland's ability to maximize its submarine forces. With that said, it would be important that this consideration be folded into the overall JTF Blue Sword concept of operations that must gain early air superiority over the Redland Sea.
- The other critical weakness that translates into a potential critical vulnerability is the sea mine storage/transit/loading area (s) and delivery platforms. All of the links and nodes that prevent the sea mines from being employed are worthy of closer examination. This is another aspect of the COG analysis that might require early discussion in the JTF Blue Sword's contingency plan development, since interdiction of the sea mine storage area may require an early "pre-hostilities" action.

Some of the critical requirements which are strengths that would likely be addressed as critical vulnerabilities (in addition to the need for JTF Blue Sword to gain air superiority over the Redland Sea), would be the Redland surface fleet, coastal missile launchers, and coastal radars. They would only be considered as critical vulnerabilities if it were assessed that an attack on the strength would provide decisive or significant results disproportionate to the military resources applied.

Summary

As can be seen from this example, COG identification and deconstruction is not simply an isolated staff planning drill. The results of this analysis permeate the entire JFMCC's concept of operations and much of the JTF's concept. The timing and sequencing of multiple joint activities are directly influenced by this early staff analysis. The need for early air superiority, the potential requirement for pre-hostilities actions, ISR collection requirements,

ROE requirements, JFMCC and JTF commander decision points, and a myriad of other operational considerations hinge on the staff's assessment of the COG. Further complicating this important endeavor is that the analysis is never complete. The staff must continually monitor the operational environment for changes or new revelations which would influence or modify the command's appreciation of the adversary (or friendly) COGs and adjust operations accordingly.

INTENTIONALLY BLANK

APPENDIX D: Design

1. GENERAL

Design is a methodology used to assist in the conception and articulation of a framework for solving a problem. Joint Force Commanders may direct the planning team to use design when planning for an unfamiliar and/or complex and ill-structured situation. Planning has two closely related components—conceptual and detailed. Design directly supports the conceptual aspect of planning by assisting the commander in his visualization of the operational environment and the nature of the problem. Conceptual planning sets the framework for the detail planning which follows. Design, however, continues throughout the planning process and into execution, and as such, is constantly evolving as increased understanding of the environment occurs, often necessitating adjustments to the original conceptualization.

Today’s commanders must plan against problems across the range of military operations. In the context of highly interconnected, multi-faceted environments, simple solution sets often fail to accomplish the mission. Design is a commander-led process with a supporting methodology to develop an operational approach for solving these problems. It usually informs the JOPP.

The commander is the central figure in design, due to not only education and experience, but also because his judgment and decisions are required to guide the staff through the process. Generally, the more complex a situation, the more critical is the role of the commander. Commanders draw on design to mitigate complexity and uncertainty, leveraging their knowledge, experience, judgment, and intuition to generate a clearer understanding of the conditions needed to focus effort and achieve success. Design supports the exercise of command, providing a broad perspective that deepens understanding and facilitates visualization.

2. DESIGN METHODOLOGY

Design methodology aspires to set the conditions for a commander, his/her staff, as well as the planning team to apply critical and creative thinking towards demanding planning situations. Critical thinking is characterized by reflective and continuous learning and requires high-order cognitive skills of analysis, synthesis, and evaluation. Creative thinking involves

“From the beginning, however, I felt the effort was doomed. Although the commander had authorized for the effort to commence, he never did participate himself. According to what I understood of the Design process—the commander had to be involved—deeply involved. It was, after all, his process. This was for him. All the commander got from the effort was a backbrief once the final product was completed. While this was perhaps better than no involvement—it was too little too late: at that point he was already divorced from the logic that had driven us to our solutions.”

Major Grant Martin, “A Tale of Two Design Efforts (and why they both failed in Afghanistan),” *Small Wars Journal*, July 2011.

thinking in new and innovative ways. An organization which lacks in either critical or creative thinking will likely be unable to exploit design to its fullest potential.

3. ORGANIZING FOR DESIGN

The commander is the linchpin of the planning team. The commander's judgment and decisions are required to effectively and efficiently guide the staff through the process. The more complex and ill-structured the problem, the greater the need for involvement of the commander and his iterative collaboration with the planning team. Since design methodology provides the context for the commander's eventual guidance for detailed planning, it is imperative that the commander aids in the shaping of the planning team's conceptualization in order to set the conditions for the commander's developing operational approach. Since using design methodologies can be a time consuming event, the commander must balance the available time for design with the demands of subsequent detailed planning to ensure adequacy of this precious resource.

The JFC will normally use the command's usual planning team to employ the design methodology. Using a discrete team separate from the planning team is also an option, but runs the risk of creating a disconnect between the complex thinking that produces the conceptual thought and the detailed planning done by the full planning team. Since there is such a large overlap between the intelligence staff's analysis of the operational environment and design methodology, the J-2 staff should be represented in any option selected to support the commander's design efforts. This appendix assumes that the full planning team is involved in the design planning.

In addition to the critical and creative thinking skills mentioned above, the members of



Figure D-1. Design Methodology

the planning team must possess requisite knowledge of the operational environment and problem being examined. To be of value, design methodology demands a deep understanding of the operational environment. This will necessitate some degree of preparation by the commander and planning team before entering into a design planning event. Depending on the nature of the problem being addressed, the commander and his planning team may also require augmentation by subject matter experts (SMEs) to facilitate a deeper understanding. **A commander and a planning team with little or no depth of knowledge of the problem being addressed are unprepared and are conducting design planning in name only.**

4. APPLYING DESIGN

There is no “one way” to apply design. Commanders and planning teams should tailor the methodology to fit the needs of the organization and the uniqueness of the problem being addressed. This appendix offers a single technique which may prove helpful as a point of departure for a maritime planning team. Nevertheless, there are four components of design methodology which should be considered as integral to any adapted design methodology (See Figure D-1). They are:

- Understand the operational direction
- Understand the operational environment
- Define the problem
- Develop an operational approach

As indicated in Figure D-1, the operational direction from the higher headquarters (HHQ) serves as the foundation for the design activity. The other three components—understand the operational environment, define the problem, and develop an operational approach—cannot be viewed as simply sequential activities. The commander and his planning team will find itself moving between all three components as deeper understanding emerges during the process. A brief summary of each of the components of design, with possible techniques, follows.

Understand the Operational Direction

Direction from the HHQ initiates planning (See Figure D-2). The direction could come in a number of formats, from written warning orders to verbal direction from the HHQ commander. In addition to specific tasks that may appear in the direction, the commander and his planning team should be especially attentive to the end state, objectives, assumptions, and HHQ commander’s intent. If any are unclear, the command should gain clarification from the HHQ. The end state and objective (s) should be posted prominently in the planning room for two reasons. The first is to serve as a reminder to the commander and the planning team as to the purpose of the design effort, answering the question, “to what end?” The second reason is that as design planning progresses and deeper understanding occurs, they will frequently revisit the HHQ stated end state and objectives to ensure that the ends are achievable and/or properly framed. Additionally, the HHQ guidance will often provide resources and limitations which will shape the commander’s operational approach. Just as the planning team will do during the JOPP, the planning team will seek to balance the four questions of ends, ways, means, and risk (See Figure D-3). If during design the “ways” and

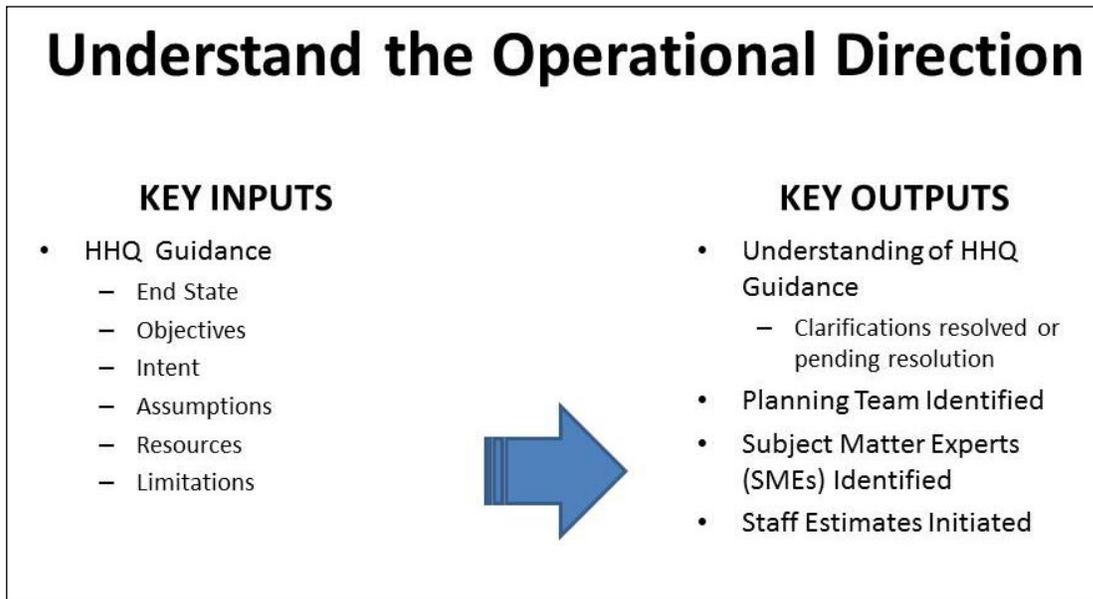


Figure D-2. Understand the Operational Direction

“means” are assessed as inadequate to accomplish the “ends,” the “risk” will expand accordingly. The commander and his planning team must identify ways to mitigate those expanding risks or apprise the HHQ with proposed modifications to the ends if the risks are assessed as too great.

Understand the Operational Environment

Gaining an understanding of the operational environment is the heart of design methodology. As a technique, it is often useful to graphically depict relevant relationships within the operational environment and identify nodes and links within a system (See Figures D-4 and D-5). The political, military, economic, social, information, and infrastructure model (PMESII) is one method to consider as a basis for depiction of interrelationships; however, the commander and his planning team should tailor the examination to its specific needs.

- (1) What are the objectives and desired end state? (**Ends**)
- (2) What sequence of actions is most likely to achieve those objectives and end state? (**Ways**)
- (3) What resources are required to accomplish that sequence of actions? (**Means**)
- (4) What is the likely chance of failure or unacceptable results in performing that sequence of actions? (**Risk**)

Figure D-3. The Four Questions.

- Node**—An element of a system that represents a person, place, or physical thing. (JP 3-0)
- Link**—A behavioral, physical, or functional relationship between nodes. (JP 3-0)
- System**— A functionally, physically, and/or behaviorally related group of regularly interacting or interdependent elements; that group of elements forming a unified whole. (JP 3-0)

Figure D-4. Key Definitions

Figure D-6 offers a simplified example of a subsystem within a PMESII system analysis as it applied to a hypothetical narcotics network analysis. The example illustrates how depicting relationships (links) between elements (nodes) in a network (system) can help the planning team develop a deeper understanding of what is actually occurring in the operational environment.

As the planning team develops its understanding of the operational environment there are several elements that should emerge during the analysis which will prove important to the design effort. The first is the interaction between actors, tendencies, potentials, and tensions. Actors, which would have been one of the nodes (or within a node) of the analysis, could be individuals, groups, nations, etc. that act to advance an interest. Tendencies indicate the inclination of an actor to think or behave in a certain manner. By identifying tendencies, the commander and his planning team can assess the range of possible actions that an actor could take with or without external influence. With actors and tendencies in hand, the commander

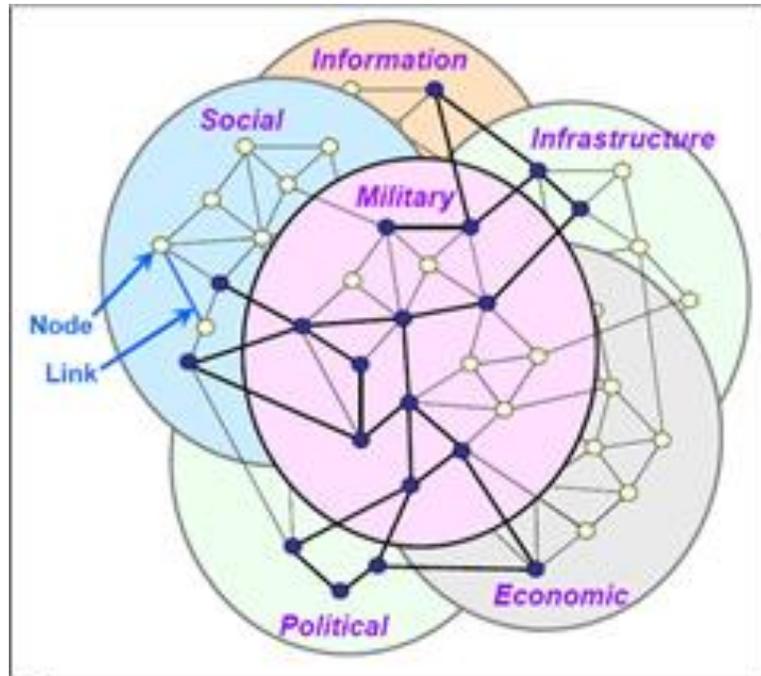


Figure D-5. Identifying and Depicting Relevant Relationships

effort. The first is the interaction between actors, tendencies, potentials, and tensions. Actors, which would have been one of the nodes (or within a node) of the analysis, could be individuals, groups, nations, etc. that act to advance an interest. Tendencies indicate the inclination of an actor to think or behave in a certain manner. By identifying tendencies, the commander and his planning team can assess the range of possible actions that an actor could take with or without external influence. With actors and tendencies in hand, the commander

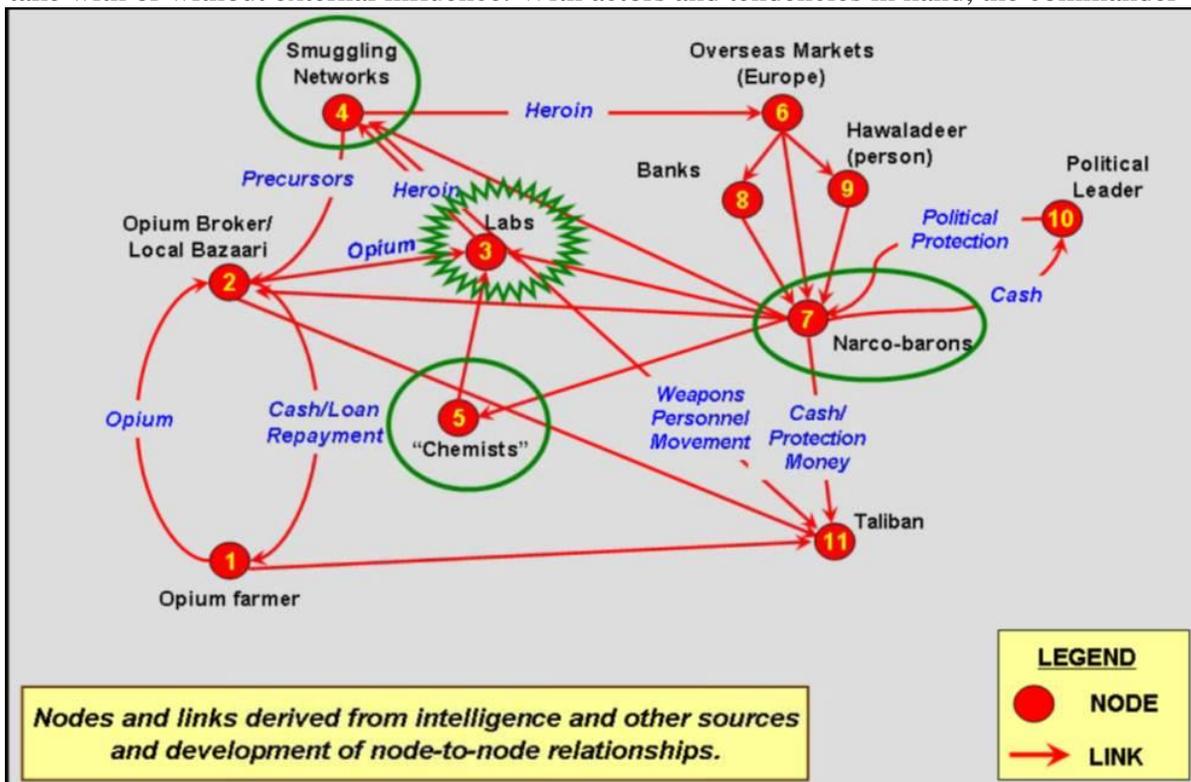


Figure D-6. Example Narcotics Network Analysis

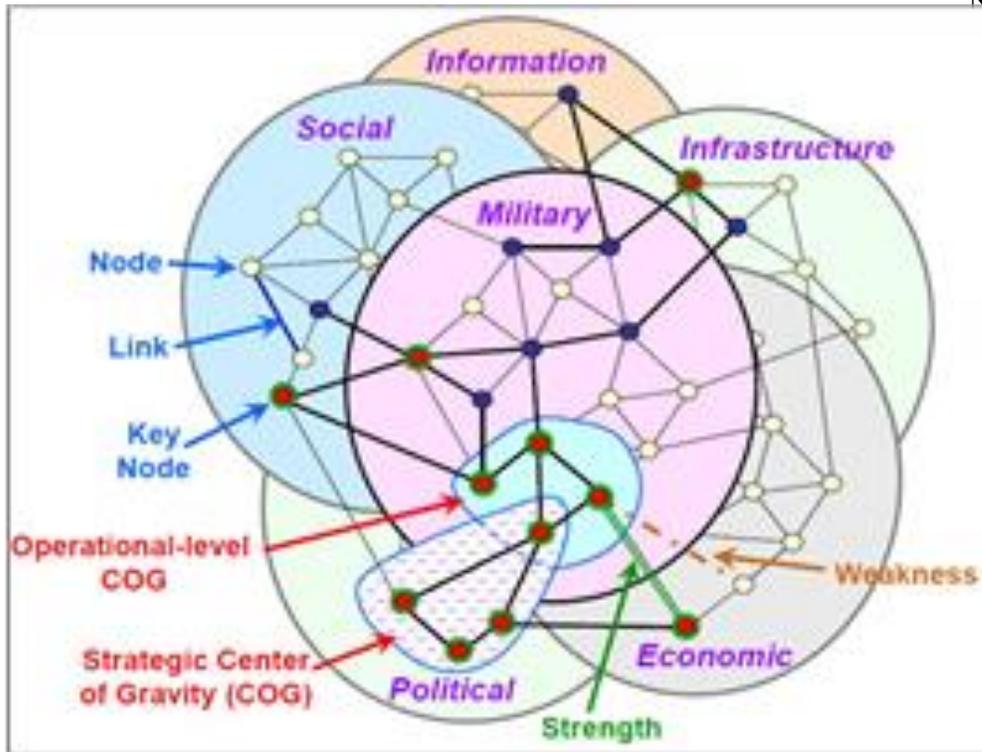


Figure D-7. Identifying the Center of Gravity

and his planning team then evaluate how the relevant identified relationships may likely manifest in the operational environment as the actors pursue their (its) ends. Identification of tensions, on the other hand, allows the commander and his planning team to recognize points of resistance or friction between actors, which often occur when differing interests or ends collide.

Related to this examination of actors, tendencies, potentials, and tensions is the useful application of a center of gravity (COG) analysis (See Appendix C) to aid in the commander and his planning team's analysis. As one should quickly discern, the design examination of the operational environment is about actors moving towards objectives, the very nature of a COG analysis. Figure D-7 provides a depiction of how a COG, and related weaknesses and decisive points may emerge during an analysis of the operational environment.

The planning team will find itself coming back to the operational environment diagrams, to update/correct/expand and otherwise improve the graphic depiction as greater understanding develops during the remainder of the design planning event. It is important that the commander and his planning team record their observations and any gaps in knowledge that must be answered. Ultimately, a successful analysis of the operational environment should deepen the commander and his planning team's understanding of what is happening, who the key actors are, what are their end states and objectives, both friendly and adversary COGs, where the environment is trending, and how does it conflict with the friendly desired end state.

Lesson Learned

The greatest understanding of the operational environment comes from an exchange of views between members of the planning team as they consider relationships in the system and reflect upon the implications of the identified relationships.

Define the Problem

The commander and planning team's previous (and ongoing) examination of tendencies and potentials shapes the emergence of the problem. While the understanding of the operational environment is the heart of the design methodology, defining the problem is the purpose of the design event (See Figure D-8). The commander and planning team identify the actors and/or circumstances in the operational environment which impede movement of the observed system to the desired system. As the commander and planning team consider the problem, it must also incorporate an understanding of the HHQ imposed limitations (which will shape the ways and means available to address the problem), as well as the earlier identified aspects of tension which could provide points of leverage or risk. The product of this analysis is a statement which is the basis for developing the operational approach. The statement should be a narrative that lists the problem's factors, describes areas of tension, competition, and opportunity, and identifies the areas for action that will transform existing conditions toward the friendly desired end state before adversaries begin transforming current conditions to their desired end state.

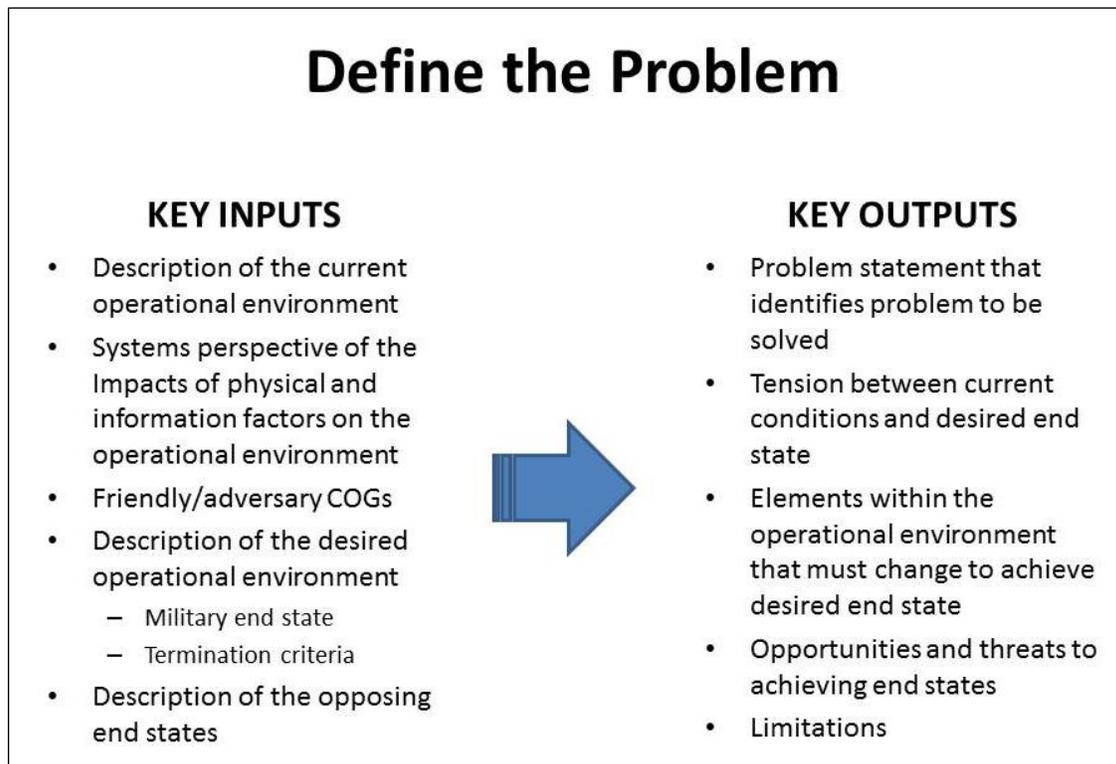


Figure D-8. Define the Problem.

Another aspect of the commander and planning team's definition of the problem is the commander's opportunity to revisit the HHQ guidance. Does the commander believe the guidance is in tune with the planning team's understanding of the operational environment and the nature of the problem? Are modifications required and/or is there a need to solicit additional guidance in view of a perceived imbalance of the four questions?

Develop an Operational Approach

The operational approach is the product which captures the commander's vision of how the operation will unfold (See Figure D-9). While the format for the operational approach will vary based upon the nature of the operation, the commander's desires, and organizational SOPs, the elements normally include:

- A description of the operational environment. A combination of narrative and graphics that describe the operational environment and key relationships and tensions.
- A definition of the problem to be solved. A narrative problem statement that includes the required timing to solve the problem.

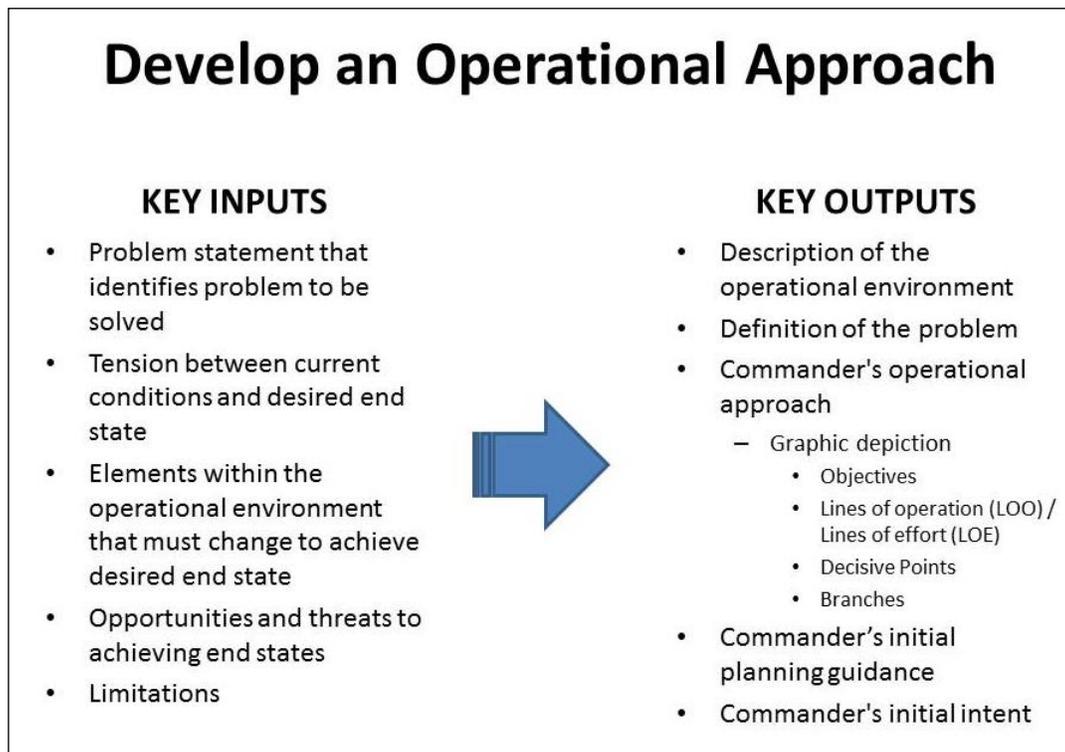


Figure D-9. Develop an Operational Approach

- A description of the operational approach. A combination of a narrative and graphics that describe the end state, objectives, and potential Lines of Operations (LOOs) and/ or Lines of Effort (LOEs). Figure D-10 is an example of one way to depict the operational approach. Note that the figures depict a comprehensive approach that requires actions or support of agencies and partners. The commander should secure the other partners' commitment to these actions, or a higher authority should direct these actions, before the commander releases the operational approach to drive detailed planning.

- Operational limitations. A description of constraints and restraints.
- The commander's initial intent. A description of the purpose of the operation, desired strategic end state, military end state, and operational risks associated with the operation. It also includes where the commander will and will not accept risk during the operation.

As can be seen from the information provided in the operational approach, many elements of the mission analysis step (See Chapter 2) are subsumed in the design effort.

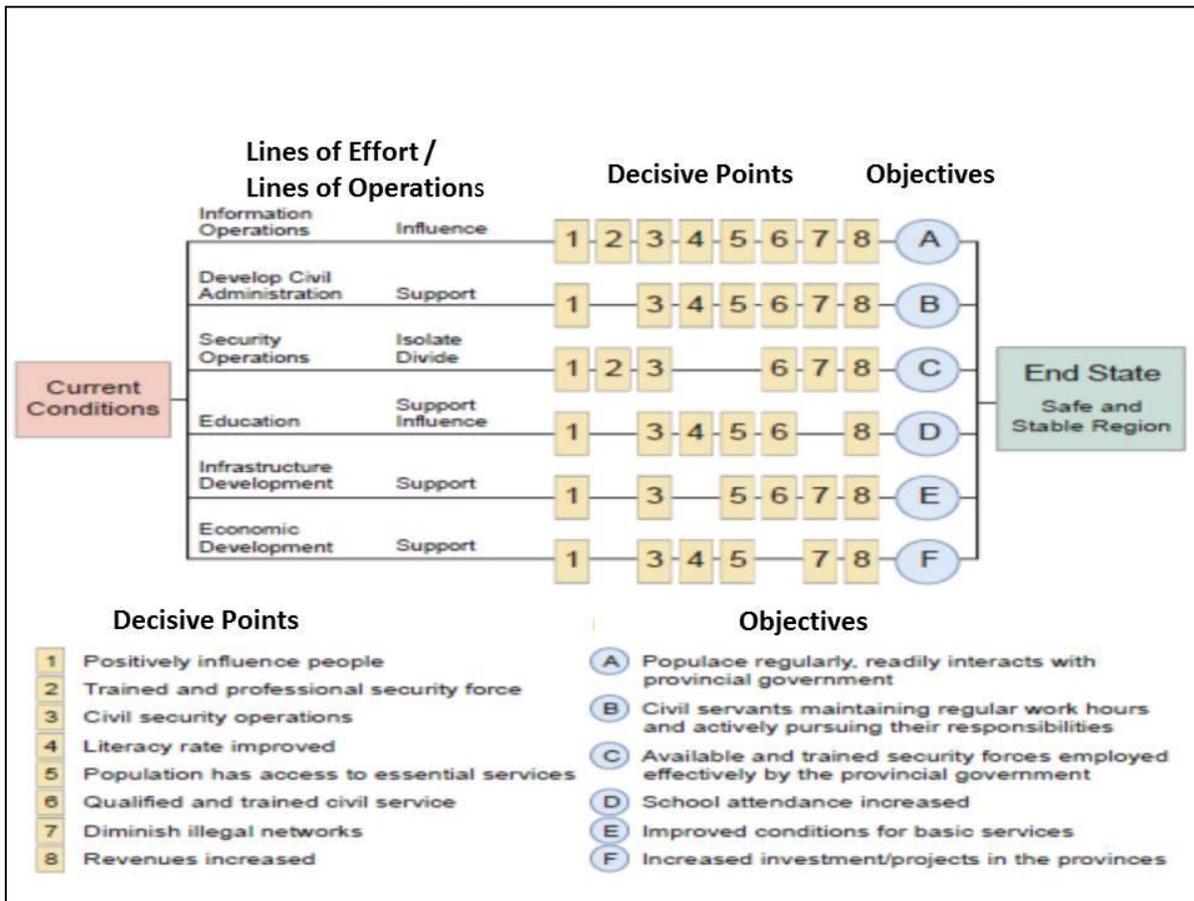


Figure D-10. Example of an Operational Approach

5. CONCLUDING THOUGHTS

This discussion of design methodology offers one approach for addressing a complex and ill-defined problem. While there are many other techniques that a planning team may find useful while employing design methodology, this methodology should have impressed upon the Navy planner a few critical components of using design:

1. The commander must be engaged in the process.
2. The planning team must be adequately prepared for the design event.
3. Dialog amongst the planning team develops deeper understanding.
4. There must be a method for ensuring the transfer of understanding between the design conceptual approach to the requirements for the detailed planning team.

APPENDIX E: Risk Assessment and Mitigation

1. RISK

The planning process enables commanders to make informed decisions, solve problems and accomplish missions in the face of a hostile adversary, challenging environment, or other obstacles. During the process the planning team will develop various options that take advantage of opportunities to solve the problems. Risk is inherent in any use of military force or routine military activity. Opportunity and risk have an inherent relationship that in many cases influences course of action decisions. Greater opportunity may require greater risk. In the planning process, the commander and staff balance these opportunities against the risks. The staff will attempt to develop various risk mitigation measures. Risk discussed in relation to the JOPP is associated with the dangers that exist due to the presence of the adversary, the uncertainty of the adversary intentions, and the potential rewards or dangers of friendly force action in relation to mission accomplishment.

From a planning perspective, risk falls into two broad categories:

1. Risk to mission (primary focus at operational level of war)
2. Risk to forces (primary focus at tactical level of war)

Based upon higher headquarters input, direction and guidance, the commander alone determines how and where to accept risk – but the staff plays a critical role in helping the commander identify the various risks and offering options for mitigation.

While risk cannot be totally eliminated, it can be mitigated by a systematic approach that weighs the costs—time, personnel, and resources—against the benefits to mission accomplishment. Commanders have always risk-mitigated their actions: intuitively, by their past experiences, judgment, or otherwise. Risk mitigation will not prevent losses but properly applied, it allows the commander to take necessary and prudent risks without arbitrary restrictions and while maximizing the application of military capabilities.

2. RISK AND OPPORTUNITY AS THEMES PERMEATING THE PLANNING PROCESS

The planning process is an iterative process. Elements of operational art such as risk, center of gravity, critical capabilities, critical requirements, critical vulnerabilities, decisive points, and CCIRs are developed and refined throughout the planning process. During JIPOE and mission analysis, friendly, adversary, and neutral actors are studied to understand their impact on operations. COG analysis is conducted for several purposes; one is to find direct and indirect paths to the adversary COGs. Choosing which critical capabilities, requirements, and vulnerabilities to attack provides a broad range of options for use in COA Development and presents possible asymmetric opportunities. Likewise, friendly COG analysis provides clarity on critical capabilities, requirements, and vulnerabilities that may be vulnerable to adversary attack. The friendly COG analysis forms the basis for threat identification in the mission analysis' initial risk assessment. As the planning process continues, the risk to friendly forces, functions, and overall mission across the developed friendly COAs are analyzed and measured in a cost/benefit comparison. As greater understanding is gained throughout the planning process, mitigation measures are developed to ensure the most effective use of military force in achieving objectives. During execution these mitigation measures are implemented and constantly reviewed and refined.

3. RISK METHODOLOGY

Our forces will be placed in an environment with risk. Ultimately, the JOPP envisions the commander making a conscious and well-informed decision on how to deal with threats. Accepting risk is a function of both risk assessment and risk mitigation. The approach to accepting risk entails the following actions: identification and assessment of threats (risk assessment) and mitigating risk; develop controls and make risk decisions; and supervising and evaluating.

3.1 Identify Threats

Identify threats to the mission and force. Consider all aspects of mission, adversary (enemy), terrain and weather, time, troops and support available and civilian considerations (METT-TC) for current and future situations. Sources of information about threats include reconnaissance, intelligence, experience/expertise of the commander and staff, etc.

3.2 Assess Threats

Assess each threat to determine the risk potential based on probability and severity of the threat. Determining the risk is more an art than a science. Use historical data, intuitive analysis, and judgment to estimate the risk of each threat. Probability and severity levels are estimated based on the user's knowledge of probability of occurrence and the severity of consequences once the occurrence happens. The level of risk is assessed by a combination of the threat, its probability of occurring, and degree of severity.

[**Note:** Ideally, the term “probability” would equate to statistically valid frequency data that has been collected and analyzed thoroughly. Realistically, this is not often possible; requiring the application of subjective professional judgment within the context of the operation to generate a written description of what is really subjective likelihood. Therefore, while the term probability is used as part of risk analysis in recognition that mathematically supportable probabilities are the goals, in most instances it is an approximated likelihood.]

3.2.1 Risk Assessment Process and Matrix

Below is the three-step process for conducting a risk assessment.

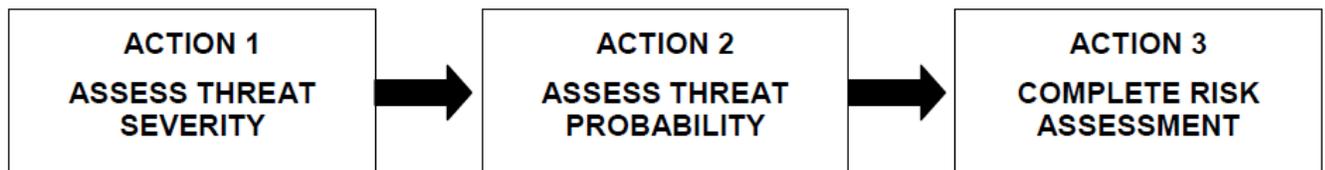


Figure E-1 Conducting a Risk Assessment

The risk assessment matrix combines severity and probability estimates to form a risk assessment for each threat. The risk assessment matrix should be utilized to evaluate the acceptability of a risk, and the level at which the decision on acceptability will be made. The matrix may also be used to prioritize resources, to resolve risks, or to standardize threat notification or response actions. Severity, probability, and risk assessment should be recorded to serve as a record of the analysis for future use. This table is only a tool to summarize the risk assessment, understanding the rationale behind the assessment is necessary to fully put the matrix in context for the operation.

		Probability				
Severity		Frequent	Likely	Occasional	Seldom	Unlikely
		A	B	C	D	E
Catastrophic	I	E	E	H	H	M
Critical	II	E	H	H	M	L
Marginal	III	H	M	M	L	L
Negligible	IV	M	L	L	L	L
E—Extremely high		H—High		M—Moderate		L—Low

Figure E-2 Risk Assessment Matrix

3.2.2 Risk assessment definitions (can be tailored to differentiate risk to mission or risk to forces).

1. E – Extremely High Risk: Loss of ability to accomplish the mission if threats occur during mission.
2. H – High Risk: Significant degradation of ability to accomplish mission, inability to accomplish all parts of the mission, or inability to complete the mission to standard if threats occur during the mission.
3. M – Moderate Risk: Expected degraded mission capabilities if threats occur during the mission.
4. L – Low Risk: Expected risk has little or no impact on mission accomplishment.

3.2.3 Severity Categories

Risk Severity Categories	
Category	Definition
CATASTROPHIC (I)	Loss of ability to accomplish the mission or mission failure. Death or permanent disability. Loss of major or mission-critical system or equipment. Major property (facility) damage. Severe environmental damage. Mission-critical security failure. Unacceptable collateral damage.
CRITICAL (II)	Significantly degraded mission capability, unit readiness, or personal disability. Extensive damage to equipment or systems. Significant damage to property or the environment. Security failure. Significant collateral damage.
MARGINAL (III)	Degraded mission capability or unit readiness. Minor damage to equipment or systems, property, or the environment. Injury or illness of personnel.
NEGLIGIBLE (IV)	Little or no adverse impact on mission capability. First aid or minor medical treatment. Slight equipment or system damage, but fully functional and serviceable. Little or no property or environmental damage.

Figure E-3 Risk Severity Categories

3.2.4 Probability Categories

Probability Definitions	
<i>Element Exposed</i>	<i>Definition</i>
<i>FREQUENT (A) Occurs very often, continuously experienced</i>	
Single item	Occurs very often in service life. Expected to occur several times over duration of a specific mission or operation.
Fleet or inventory of items	Occurs continuously during a specific mission or operation, or over a service life.
Individual	Occurs very often. Expected to occur several times during mission or operation.
All personnel exposed	Occurs continuously during a specific mission or operation.
<i>LIKELY (B) Occurs several times</i>	
Single item	Occurs several times in service life. Expected to occur during a specific mission or operation.
Fleet or inventory of items	Occurs at a high rate, but experienced intermittently (regular intervals, generally often).
Individual	Occurs several times. Expected to occur during a specific mission or operation.
All personnel exposed	Occurs at a high rate, but experienced intermittently.
<i>OCCASIONAL (C) Occurs sporadically</i>	
Single item	Occurs some time in service life. May occur about as often as not during a specific mission or operation.
Fleet or inventory of items	Occurs several times in service life.
Individual	Occurs over a period of time. May occur during a specific mission or operation, but not often.
All personnel exposed	Occurs sporadically (irregularly, sparsely, or sometimes).
<i>SELDOM (D) Remotely possible; could occur at some time</i>	
Single item	Occurs in service life, but only remotely possible. Not expected to occur during a specific mission or operation.
Fleet or inventory of items	Occurs as isolated incidents. Possible to occur some time in service life, but rarely. Usually does not occur.
Individual	Occurs as isolated incident. Remotely possible, but not expected to occur during a specific mission or operation.
All personnel exposed	Occurs rarely within exposed population as isolated incidents.
<i>UNLIKELY (E) Can assume will not occur, but not impossible</i>	
Single item	Occurrence not impossible, but can assume will almost never occur in service life. Can assume will not occur during a specific mission or operation.
Fleet or inventory of items	Occurs very rarely (almost never or improbable). Incidents may occur over service life.
Individual	Occurrence not impossible, but may assume will not occur during a specific mission or operation.
All personnel exposed	Occurs very rarely, but not impossible.

Figure E-4 Risk Probability Definitions

3.3 Develop Controls and Make Risk Decisions

For each threat, develop options that will mitigate or reduce the risk of the threat. Specify who, what, where, when, and how. Determine any residual risk and revise the evaluation of the level of risk remaining. The commander alone then decides whether or not to accept the level of residual risk. If the commander determines that the risk is too great to continue the mission or a COA, then the commander directs the development of additional measures to account for the risk, or the COA is modified or rejected.

The following actions may assist the staff with thinking through options to mitigate risk:

1. Adherence to the principles of joint operations
2. Requests for forces
3. Proposed modifications to rules of engagement
4. Information operations activities
5. Employment of reserve forces
6. Effective operational assessments

3.3.1 Implement controls

Think through the threat—what information will provide indication that the risk is no longer acceptable? Ensure that subordinates and staff are informed of the importance of communicating the status of those indicators or controls and that they are included in the staff’s operational assessment measures.

3.4 Supervise and Evaluate

In execution, monitor the status of the indicators and enact further options as warranted. After the operation, evaluate the effectiveness of each option in mitigating or eliminating risk.

4. APPLYING RISK MITIGATION

Risk mitigation requires a clear understanding of what constitutes unnecessary risk, when the benefits actually do outweigh costs, and guidance as to the command level to make those decisions. When a commander decides to accept risk, the decision must be coordinated with higher headquarters and other components, partners, and subordinate commands potentially affected; where and how the commander is willing to accept risk are detailed in each COA.

The figure below identifies the risk mitigation steps that should be accomplished during each step of the planning process.

JOPP Steps	Step 1: Identify Threats	Step 2: Assess Threats	Step 3: Develop Controls and Make Risk Decisions	Step 4: Implement Controls	Step 5: Supervise and Evaluate
Initiation and Mission Analysis	X	X			
Course of Action Development	X	X	X		
Course of Action Analysis (Wargaming)	X	X	X		

Course of Action Comparison and Decision			X		
Plan or Order Development			X	X	
---- Transition	X	X	X	X	X

Figure E-5 Risk Mitigation Steps Within JOPP

5. RISK ASSESSMENT FOR COMMANDERS AND THEIR STAFFS

Commanders seek to gain and maintain initiative causing the adversary to make mistakes and providing friendly opportunities. The commander promotes calculated, disciplined risk-taking focused on ‘winning’ rather than preventing defeat—often even when preventing defeat appears safer. Because uncertainty is a normal condition at any level, every decision incurs risk. Risk at the operational/operational-tactical level has characteristics that can be different from risk at lower tactical levels. For example, functional and service component commands plan and operate as part of a joint force, a JFMCC or NCC operational risk is closely linked to other components and the joint force commander’s mission and objectives at that level. Regardless of the level risk is composed of two distinct yet interrelated areas:

1. Risk established at the higher headquarters and delegated to its subordinates
2. Risk shared between adjacent organizations (functional or Service component commanders, or shared between between TFs)

Each of these risk areas needs to be analyzed as it relates to the mission and objectives, and as discussed earlier, to friendly and adversary centers of gravity. In the initial design of an operation, establishment of the broad operational approaches will provide better clarity on potential intersection of adversary threats and friendly lines of operation. During mission analysis and COA Development, the commander will provide more details on how risk is distributed to adjacent and subordinate organizations. The supported/supporting functional, Service component commanders may be directed to mitigate or accept risk in order to comply with the commander’s method to attack the adversary. A supporting commander may incur a higher risk to place the adversary at a disadvantage elsewhere. The supporting commander may direct a requirement to the supported commander that will result in accepted risk. The subordinate command would then conduct normal risk assessment and mitigation. See Figure E-6.

5.1 DISPLAYING RISK ASSESSMENT AND MITIGATION FOR THE COMMANDER

There are many options for displaying risk assessment and mitigation for a commander. The following examples (Figures E-6 through E-8) are provided as baseline formats in both written and graphical form. Staffs should appreciate that every commander will likely desire a different method for displaying risk – these examples are only provided as a starting point from which a staff can deviate.

<i>Risk to Mission/Forces – Assessment</i>			
Phase I	Probability	Severity	Risk
Hostile actions against coalition forces/civilians during NEO	Seldom	Critical	Mod
CDCM threat (all phases)	Seldom	Critical	Mod
Destructive weather/natural disaster (all phases)	Seldom	Critical	Mod
Phase II	Probability	Severity	Risk
Hostile actions against coalition forces/civilians during NEO	Seldom	Critical	Mod
Submarine interdiction of SLOCs (all future phases)	Occasional	Critical	High
Phase III	Probability	Severity	Risk
Mass migration (all future phases)	Occasional	Critical	High
Mining of SLOCs	Occasional	Marginal	Mod

<i>Risk to Mission/Forces – Mitigation</i>		
Phase I	Mitigating Actions	Adjusted Risk
Hostile actions against coalition forces/civilians during NEO	ISR/FP measures/ modified ROE/MISO	Low
CDCM threat (all phases)	ISR/EA/MISO	Mod
Destructive weather/natural disaster (all phases)	METOC/ SLOC Branch Plans	Low
Phase II	Mitigating Actions	Risk
Hostile actions against coalition forces/civilians during NEO	ISR/ FP measures/ modified ROE/MISO	Low
Submarine interdiction of SLOCs (all future phases)	ISR/ ASW/ MISO	Med
Phase III	Mitigating Actions	Risk
Mass migration (all future phases)	Branch Plan	Mod
Mining of SLOCs	ISR/ MISO / MCM RFF	Mod

Figure E-6. Example of a Written Risk Assessment and Mitigation for a JFMCC

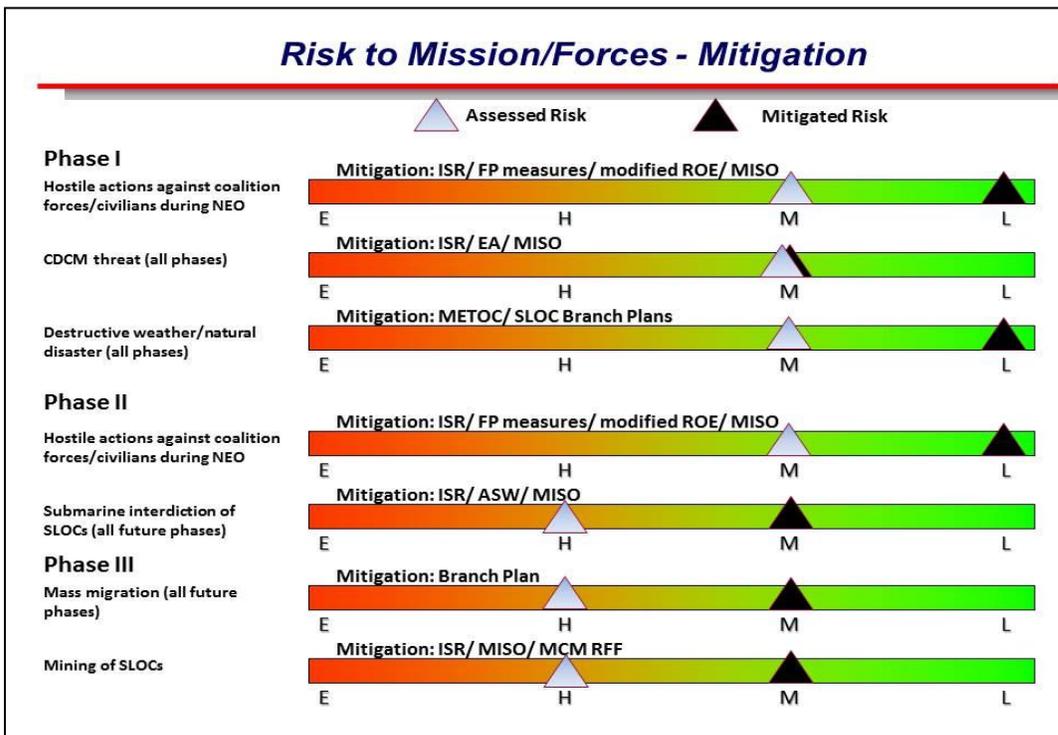
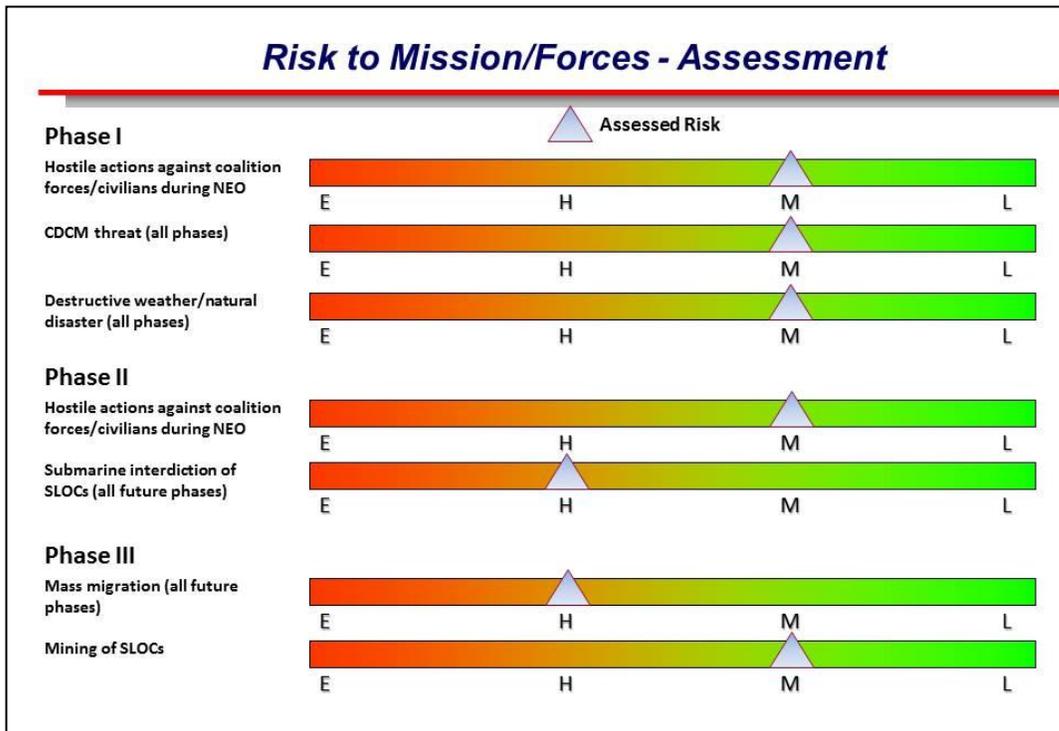


Figure E-7. Example of a Graphical Risk Assessment/and Mitigation for a JFMCC

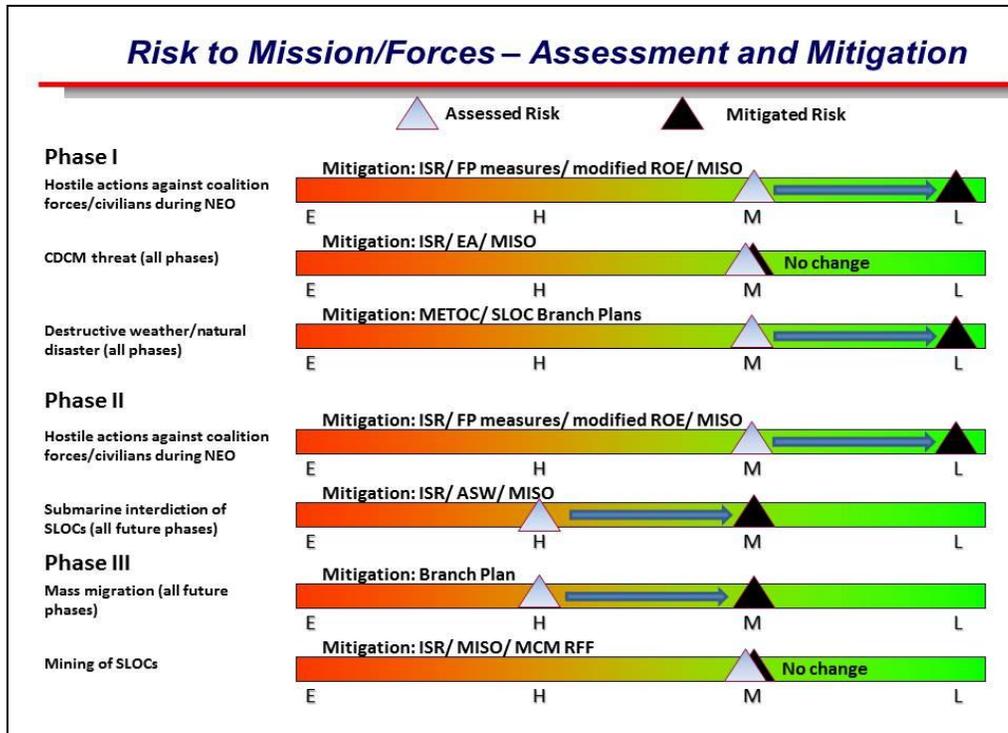


Figure E-8. Example of a Combined Graphical Risk Assessment and Mitigation for a JFMCC

Risk therefore is a factor that is present in nearly every aspect of military actions whether at the tactical or operational level. Operational commanders need to consider where risk is located and where risk needs to be accepted. The following is a checklist of risk areas that should be considered.

1. What risk has been accepted by higher headquarters that directly impacts the command?
2. During parallel planning, what additional risks are introduced or identified during COA development, analysis, comparison, and the developed CONOPS?
3. As a supporting commander, what risk has been incurred to support a different functional component commander? Can these risks be mitigated?
4. As a higher commander, what risks are accepted that are passed to subordinate tactical commanders? How will these risks be mitigated?

APPENDIX F: Staff Estimates

1. PURPOSE OF ESTIMATES

A key responsibility of any staff or force is to provide the commander with relevant information that supports decision making. This is accomplished throughout planning and execution through staff estimates. An estimate is a detailed evaluation of how factors in a staff section's functional area or subordinate commander's warfare area support affect the mission. Estimates provide a continuous assessment as to the supportability of current and future operations.

2. TYPES OF ESTIMATES

2.1 Staff Estimates

During planning, staff estimates support staff contributions to the JOPP and form the basis for annexes and appendices of orders or plans. During execution, they can provide functional insight and assessment of ongoing operations as well as a visualization of implications for future operations. There are various estimates a maritime staff may be required to provide or support in development. Generally, any staff representative that provides input to a commander's decision process and/or participates in planning should produce or contribute to a staff estimate. They may be presented as text documents, graphic or oral presentations. Their form depends on the time available, command standard operating procedures (SOPs), and the level of command. The format, however, should not be an impediment for providing timely information that is relevant to the commander's decisions. Types of staff estimates generated by maritime staffs include, but are not limited to:

- Operations estimate
- Personnel estimate
- Intelligence estimate
- Logistics estimate
- Communications
- Civil-military operations estimate
- Information operations estimate
- Special staff estimates (e.g., legal, public affairs, medical)

See Annexes F 1-4 for formats of selected written staff estimates.

2.2 Estimates of Supportability

The joint force commander (JFC) may require subordinate commanders to submit estimates of supportability. In this sense, estimates of supportability ensure alignment among senior and subordinate commanders and staffs with regard to proposed courses of action (COAs), tasks or missions, and capabilities. The estimate of supportability should indicate the subordinate unit's ability to support each COA and identify risks associated in supporting them. See Annex F-6 for a sample estimate of supportability.

2.3 Commander's Estimate

As part of response to an emerging crisis, geographic combatant commanders (GCCs) may be required to produce a commander's estimate or Level 1 planning detail. The commander's estimate provides the Secretary of Defense with military options to meet a potential contingency. Component commanders may be required to submit supporting plans to the commander's estimate. In some cases, especially if the maritime headquarters serves as the framework for a JTF headquarters, the GCC may request the JTF to submit a commander's estimate. See Annex F-5 for a sample commander's estimate.

3. ESTIMATES IN THE JOINT OPERATION PLANNING PROCESS

Staff estimates are developed and continuously refined throughout planning and execution to ensure COAs and current operations are supportable and sustainable. In addition, subordinate commanders provide estimates of supportability throughout the planning process.

3.1 Initiation

Upon receipt of the mission or as directed, the functional and special staffs analyze all relevant information to include plans, orders and directives to determine initial support requirements. This along with mission analysis is the information-gathering phase of staff estimates.

The development of facts and assumptions and the situation analysis (of the area of operations, area of interest, and adversary, friendly, and support requirements) furnish the basis for the staff estimate. The estimate consists of significant facts, events, and conclusions based on analyzed data. It recommends how to best use available resources. Good, rapid decision making and planning hinge on thorough, timely estimates of supportability and staff estimates. They are the basis for forming viable COAs.

Staff elements should be "out in front" of the planning effort in order to provide key facts necessary to begin understanding the operational environment and friendly situation. Tardy relevant data can lead to critical errors and omissions during subsequent planning. Staff sections should begin their initial assessment of their specific functional areas and provide this information to the JPG via their representative in the responsible planning group. Staff estimates at this point of the JOPP will most likely be informal because the situation is still unfolding.

3.2 Mission Analysis

During mission analysis, staff sections examine the mission from their specific point of view to assist the commander and the staff in gaining a deeper understanding of the operation. The process looks similar to the mission analysis process, but from a functional point of view. Information and analysis developed by the staff sections is forwarded through their representatives to the JPG to feed the overall mission analysis. Depending on the mission, information from specific staff estimates that are critical to planning should be included in the overall mission analysis briefing to the commander. Staff estimates at this point can be either formal or informal but consideration should be made to putting the estimate on paper to be used in follow-on plan or order development.

3.3 COA Development

After completion of the mission analysis briefing with the commander, the staff has an approved mission statement, an initial commander's intent, initial CCIRs and planning guidance to focus efforts during COA development. With this information, the planning team begins to develop options to accomplish the assigned mission. During the initial stage of COA development, staff sections should develop their formal staff estimates and share them with adjacent and subordinate commands to enhance information flow.

Once the planning team has identified draft COAs, the staff sections change their focus from information gathering to developing concepts of support for these COAs. The first step is to determine the functional area requirements for each individual COA from their staff perspective. For instance, determine the personnel (legal, postal, chaplain, etc.), logistics (forward basing, fuel, ammunition, host-nation support, etc.), protection (force protection, personal recovery, etc.) and medical support requirements of each COA. The next step is for each staff section to conduct an initial test for validity for each COA from their specific staff or functional point of view. This validity check should examine whether the COAs are suitable, feasible, acceptable, distinct and complete and is intended to prevent the planning team from presenting COAs to the commander that for one reason or another cannot be executed (see Chapter 3 for COA tests for validity). Once the validity check is complete, staff sections should develop individual concepts for how their functions can support the overall operation and any changes required to support the COA variations. This could entail recommendations for basing, logistics flow, force placement, SLOCs, employment options to comply with specific legal regimes, etc. Taken together, the staff estimates provide more detail for the planning team's COAs. The estimates should highlight from a functional perspective risks (and potential mitigations) and opportunities afforded by the various COAs. The staff estimates also enable a quicker development of the overall concept of operations once a COA has been selected. The next step for the staff sections should be to identify potential tasks for their counterparts in subordinate units to accomplish for their functional area. Those tasks are important for the overall operation and should eventually be part of base plan or order while the others should eventually be incorporated into the applicable annex/appendix. Additionally, functional staff planners should be prepared to brief their respective concepts of support, by phase, with tasks to subordinates, identifying functional limitations and capability gaps. Lastly, staff sections should assist the JPG in creating the COA development briefing including providing input for potential COA evaluation criteria.

3.4 COA Analysis (Wargaming)

In order to provide input to COA analysis, the staff supports the wargaming process. This includes not only sending representatives to the war game to provide functional area expertise, but also providing those representatives with the concepts of support developed by their individual staff sections during the COA development phase. These concepts of support, while not yet finalized, should contain important planning factors (tentative intelligence collection plan that would be in place, information operations themes and messages, tentative rules of engagement, casualty evacuation concept, expected Class III and V expenditure rates, time to transport evacuees during a noncombatant evacuation operation (NEO), basing considerations, etc.) and risks associated with each COA. Lastly, the concepts of support assist in development of the synchronization matrix which displays in tabular format how each subordinate task force and/or organization and operational function should be employed throughout the phases of the operation.

During the war game, the individual concepts of support are the basis for friendly force action based on the operational functions. This information provides fidelity for friendly moves and counter-moves. While conducting the war game, functional area representatives should assist the planning team in identifying critical events and decision points from their perspective for the individual COAs. Lastly, functional area representatives should assist in developing evaluation criteria to assess the COAs. It is important for all representatives to keep their own record of how adversary or threat actions affect how they planned to support the overall operation.

After the war game, the functional area representatives brief their staff sections on what was learned from their perspective. In particular, if adversary or threat actions require drastic alteration to an individual concept of support, the staff section quickly makes appropriate changes and ensures the rest of the staff is informed in case the new concept of support affects others. In the event of a major change in a functional concept of support, the planning team may be required to re-wargame the affected COAs to ensure they remain viable and to consider any potential unintended consequences. Individual staff estimates should be updated and included during planning for potential branch plans.

3.5 COA Comparison and Decision

Based on the analysis of the war game, staff sections should identify the advantages and disadvantages of each COA from their functional area perspective. The staff estimates should provide a recommended COA to the commander.

After a COA has been selected, the staff continues to finalize their concepts of support, fill in the synchronization matrix, and inform the concept of operations.

3.6 Plan or Order Development

Once the staff has developed the CONOPS (see Chapter 5), staff estimates should be used to form the cornerstone for much of the content of the base plan or order, annexes, and appendices. Figure F-1 shows the relationship between individual staff estimates and portions

of a plan or order. Staff estimates in text format can be easily transferred into directives with minimal changes. Maps, overlays and graphics can be used for clarification.

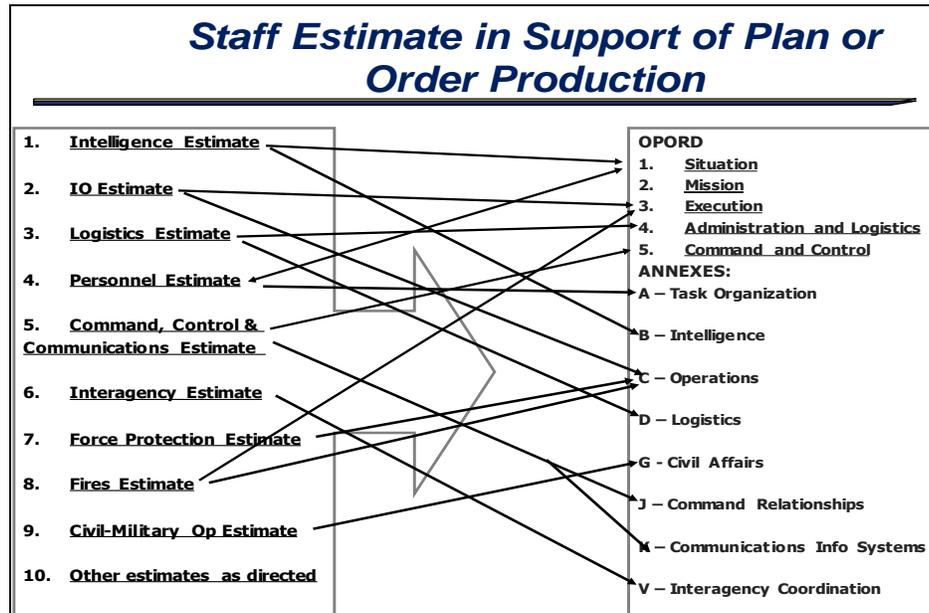


Figure F-1. Relationship between Staff Estimates and Plan or Order Development

3.7 Plan or Order Development

During the Plan or Order Development step of the JOPP, the staff should transition all relevant information and tools to whomever is monitoring the execution or refining the transitioned plan. Tools that track readiness such as the status of supply, networks, ISR platforms, etc. help the staff to maintain situational awareness and identify deficiencies that may affect operations or other staff sections.

4. STAFF ESTIMATES DURING EXECUTION—THE RUNNING ESTIMATE

During execution, staff estimates track current status, using the tools that either were transitioned from planning or are part of routine operations. Staff estimates which support current operations are updated frequently to maintain relevancy and are often referred to as *running estimates*. Figure F-2 provides a sample of a logistics running estimate to track the level of sustainment for the force. Any conclusions and recommendations that are developed during planning should be revised based on the impact of new facts, assumption validation or invalidation, and updated commander's guidance. These modifications are especially useful in operational assessment, decision support, and in preparing for a change of phase or mission. Additionally, continually updated staff estimates enable quicker development of required branch and sequel plans.

Lesson Learned

Staffs often forget that the major purposes of estimates during execution are to support the commander’s decisions as well to assist in effecting timely staff actions (e.g., resupply, reorienting, etc.). This means that the functional estimates should be tightly linked to the commander’s friendly force information requirements (FFIRs), and priority intelligence requirements (PIRs). Information collected which does not support either, and is not necessary for functional staff actions, is probably superfluous and an unnecessary reporting burden.

Logistics Readiness Center

LOGISTICS STATUS:

FORCE LAYDOWN:

Current/Next 24 hours

		CTF 770 USNS Bridge (T-AOE 10) – IVO STEELERS
		CTF 772 USNS Alan B. Shepard (T-AKE 3) – IVO GIANTS
		CTF 773 USNS Tippecanoe (T-AO 199) – IVO GIANTS
		CTF 774 USNS Carl Brashear (T-AKE 7) – IVO CHARGERS
		CTF 775 USNS Yukon (T-AO 202) – IVO CHARGERS
		CTF 776 HMAS Sirius (O266) – ENRT BILLS
		CTF 777 RFA Ft Victoria (A387) – IPT SGP

Status:  >60%  59%-51%  < 50%

• Next 24 hours:

- CLWP continue negotiations to establish Georgetown as FLS
- RAS: FLR BWK OCN IND MCB MLB MUS CRD
- BSF: SYD GRD PAT KAT PUN NRS SKT ARU

• Challenges:

- Revision of RAS support plan based upon recent changes
- Determine availability of hygiene and medical supplies; possible NEO
- Coordinate OP/FP coordination for URG vessels – SS and SOM.
- Georgetown as FLS

Figure F-2 Sample Logistics Running Estimate Used During Execution (JFMCC example)

ANNEX F-1

GENERIC STAFF ESTIMATE

1. Mission: Mission statement results from mission analysis.
2. Situation:
 - a. Characteristics of the Area of Operation
 - (1) Weather. How different military aspects of weather could affect specific staff areas of concern and resources
 - (2) Geography. How aspects of physical space could influence specific staff areas of concern and resources (maritime, land, air space)?
 - (3) Other Pertinent Facts. Pertinent political, economic, sociological, and psychological factors and infrastructure.
 - b. Adversary Forces. Adversary disposition, composition, strength, capabilities, and COA(s) as they affect specific staff areas of concern.
 - c. Friendly Forces
 - (1) Friendly COA(s).
 - (2) Current status of resources.
 - (3) Comparison of requirements versus capabilities and recommended solutions.
 - (4) Key considerations (governing factors/evaluation criteria) for COA supportability.
 - d. Assumptions
3. Analysis. Analyze each COA using key considerations (evaluation criteria) to determine advantages and disadvantages.
4. Comparison. Compare COA(s) using key considerations (evaluation criteria). Rank COA(s) for each key consideration. Support each comparison with a decision matrix.
5. Recommendations and Conclusions
 - a. Recommended a COA based on the comparison (most supportable from specific staff perspective).
 - b. Discuss issues, deficiencies, and risks with impact mitigations.

INTENTIONALLY BLANK

ANNEX F-2

Intelligence Estimate

CLASSIFICATION

Issuing Headquarters
Place of Issue
Day, Month, Year, Hour,

Zone

INTELLIGENCE ESTIMATE NUMBER _____

- () REFERENCES: a. Maps and charts
 b. Other relevant documents

1. () MISSION. State the assigned task and its purpose. The mission of the command as a whole is taken from the commander's mission analysis, planning guidance, or other statement.

2. () ADVERSARY SITUATION. State conditions that exist and indicate how they affect adversary capabilities and the assigned mission. This paragraph describes the AO, the adversary military situation, and the effect of these two factors on adversary capabilities.

a. () Characteristics of the Area of Operations. Discuss the physical characteristics of the AO on military activities of all combatants. If an analysis of the area has been prepared separately, this paragraph in the intelligence estimate may simply refer to it and then discuss how it influences the existing situation on the military AO.

(1) () Military Geography.

(a) Topography.

1. () Situation. Describe relief and drainage, vegetation, surface materials, cultural features, and other characteristics in terms of their influence on key terrain, observation, fields of fire, obstacles, cover and concealment, avenues of approach, lines of communication, and landing areas and zones.

2. () Effect on Adversary Capabilities. Discuss the influence of topography on broad adversary capabilities such as attack and defense, describing generally how the topography affects each type of activity. The effect on employment of CBRNE weapons; amphibious, airborne, or air-landed forces; surveillance devices and systems; communications equipment and systems; electronic warfare; MISO, OPSEC and military deception; logistic support; and other appropriate considerations should be included.

3. () Effect on Friendly Courses of Action. Discuss the influence of topography on friendly forces' military operations (attack, defense, etc.) in the same fashion as for the adversary in the preceding subparagraphs.

(b) () Oceanography and Hydrography.

1. () Situation. Describe the nature of the coastline; adjacent islands; location, extent, and capacity of landing beaches and their approaches and exits; nature of the offshore approaches, including bottom type and gradients; natural obstacles; surf, tides, and current conditions.

2. () Effect on Adversary Capabilities. Discuss the impact of the existing situation on broad adversary capabilities.

3. () Effect on Friendly Courses of Action. Discuss the impact of the existing situation on broad friendly COAs.

(c) () Climate and Weather.

1. () Situation. Describe temperature, cloud cover, visibility, precipitation, day and night illumination data, and other climate and weather conditions and their general effects on roads, rivers, soil trafficability, and observation.

2. () Effect on Adversary Capabilities. Discuss the impact of the existing climate and weather situation on broad adversary capabilities.

3. () Effect on Friendly Courses of Action. Discuss the impact of the existing climate and weather situation on broad friendly COAs.

(2) () Transportation.

(a) () Situation. Describe roads, railways, inland waterways, airfields, and other physical characteristics of the transportation system and their capabilities in terms of rolling stock, barge capacities, and terminal facilities; and other pertinent data.

(b) () Effect on Adversary Capabilities. Discuss the impact of the existing transportation system and capabilities on broad adversary capabilities.

(c) () Effect on Friendly Courses of Action. Discuss the impact of the existing transportation system and capabilities on broad friendly COAs.

(3) () Telecommunications.

(a) () Situation. Describe telecommunications facilities and capabilities in the area.

(b) () Effect on Adversary Capabilities. Discuss the impact of the existing telecommunications situation on broad adversary capabilities.

(c) () Effect on Friendly Courses of Action. Discuss the impact of the existing telecommunications situation on broad friendly COAs.

(4) () Politics.

(a) () Situation. Describe the organization and operation of civil government in the area of operation.

(b) () Effect on Adversary Capabilities. Consider the impact of the political situation on broad adversary capabilities.

(c) () Effect on Friendly Courses of Action. Consider the impact of the political situation on broad COAs for friendly forces.

(5) () Economics.

(a) () Situation. Describe industry, public works and utilities, finance, banking, currency, commerce, agriculture, trades and professions, labor force, and other related factors.

(b) () Effect on Adversary Capabilities. Discuss the impact of the economic situation on broad adversary capabilities.

(c) () Effect on Friendly Courses of Action. Discuss the impact of the economic situation on broad COAs for friendly forces.

(6) () Sociology.

(a) () Situation. Describe language, religion, social institutions and attitudes, minority groups, population distribution, health and sanitation, and other related factors.

(b) () Effect on Adversary Capabilities. Discuss the impact of the sociological situation on broad adversary capabilities.

(c) () Effect on Friendly Courses of Action. Discuss the impact of the sociological situation on broad COAs for friendly forces.

(7) () Science and Technology.

(a) () Situation. Describe the level of science and technology in the AO.

(b) () Effect on Adversary Capabilities. Discuss the impact of science and technology on broad adversary capabilities.

(c) () Effect on Friendly Courses of Action. Discuss the impact of science and technology on broad COAs for friendly forces.

b. () Adversary Military Situation (Ground, Naval, Air, Other Services).

(1) () Strength. State the number and size of adversary units committed and adversary reinforcements available in the AO. Consider ground strength; air power; naval forces; nuclear, biological, and chemical weapons; electronic warfare; unconventional warfare; surveillance potential; and all other strengths (that might be significant).

(2) () Composition. Outline the structure of adversary forces (order of battle) and describe significant organizational features, identity, armament, and weapon systems.

- (3) () Location and Disposition. Describe the geographic location of adversary forces in the area, including fire support elements; command and control facilities; air, naval, and missile forces; and bases.
- (4) () Availability of Reinforcements. Describe adversary reinforcement capabilities in terms of ground, air, naval, missile, nuclear, biological, and chemical forces and weapons; terrain, weather, road and rail networks, transportation, replacements, labor forces, prisoner of war policy; and possible aid from sympathetic or participating neighbors.
- (5) () Movements and Activities. Describe the latest known adversary activities in the area.
- (6) () Logistics. Describe levels of supply, resupply ability, and capacity of beaches, ports, roads, railways, airfields, and other facilities to support supply and resupply. Consider hospitalization and evacuation, military construction, labor resources, and maintenance of combat equipment.
- (7) () Operational Capability to Launch Missiles. Describe the total missile capability that can be brought to bear on forces operating in the area, including characteristics of missile systems, location and capacity of launch or delivery units, initial and sustained launch rates, size and location of stockpiles, and other pertinent factors.
- (8) () Serviceability and Operational Rates of Aircraft. Describe the total aircraft inventory by type, performance characteristics of operational aircraft, initial and sustained sortie rates of aircraft by type, and other pertinent factors.
- (9) () Operational Capabilities of Combatant Vessels. Describe the number, type, and operational characteristics of ships, boats, and craft in the naval inventory; base location; and capacity for support.
- (10) () Technical Characteristics of Equipment. Describe the technical characteristics of major items of equipment in the adversary inventory not already considered (such as missiles, aircraft, and naval vessels).
- (11) () Electronic Intelligence. Describe the adversary intelligence-gathering capability using electronic devices.
- (12) () Chemical, Biological, Radiological, Nuclear and high- yield Explosives (CBRNE). Describe the types and characteristics of nuclear, biological, and chemical weapons in the adversary inventory; stockpile data; delivery capabilities; nuclear, biological, and chemical employment policies and techniques; and other pertinent factors.
- (13) () Significant Strengths and Weaknesses. Discuss the significant adversary strengths and weaknesses derived from the facts presented in the preceding subparagraphs.
- c. () Adversary Unconventional and Psychological Warfare Situation.
- (1) () Guerrilla. Describe the adversary capability for, policy with regard to, and current status in the area of guerrilla or insurgent operations.
- (2) () Psychological. Describe adversary doctrine, techniques, methods, organization for, and conduct of MISO in the AO.

(3) () Subversion. Describe adversary doctrine, techniques, methods, organization for, and conduct of subversion in the AO.

(4) () Sabotage. Outline the adversary organization and potential for and conduct of sabotage in the AO.

3. () **ADVERSARY CAPABILITIES.** List each adversary capability that can affect the accomplishment of the assigned friendly mission. Each adversary capability should contain information on what the adversary can do; where it can do it; when it can start and finish it; and what strength it can devote to the task. The N-2 must be able to tell the commander what the adversary can do using its forces in a joint effort. First, of course, the N-2 must assess the adversary’s ground, naval, and air forces. It is customary to enumerate the WMD and unconventional warfare capacities separately. Hypothetical examples follow:

a. () Ground Capabilities.

(1) () The adversary can attack at any time along our front with an estimated six infantry divisions and two tank divisions supported by 24 battalions of artillery.

(2) () The adversary can defend now in its present position with seven infantry divisions supported by two tank divisions and 16 battalions of medium and light artillery.

(3) () The adversary can reinforce its attack (or defense) with all or part of the following units in the times and places indicated:

UNIT	PLACE	TIME
315th Airborne Division	Vicinity RESOGA	eight hours after starting time
41st Motorized Division	Vicinity CARDINAL	six hours after starting time

b. () Air Capabilities.

(1) () Starting now and based on an estimated strength of 300 fighters and 100 medium bomber aircraft, the adversary can attack in the AO with 240 fighter sorties per day for the first two days, followed by a sustained rate of 150 sorties per day and 60 bomber sorties per day for one day followed by a sustained rate of 48 sorties per day.

(2) () Using airfields in the vicinity of _____, the adversary has sufficient transport sorties to lift one regiment in a single lift to airfields in the vicinity of _____, _____, and _____ within four hours of flying time.

c. () Naval Capabilities. Starting now, the adversary can conduct sustained sea and air operations in the entire area with six DDGs, four CGs, one CVN, seven SSNs, a mine force of 20 craft, and 70 gunboats and smaller craft now on station in the area.

d. () Nuclear Capabilities. The adversary can employ at any time and in any part of the AO an estimated 40 to 60 nuclear weapons of yields from two to 50 kt delivered by cannon and rocket artillery, guided missiles, and aircraft.

e. () Chemical Biological Capabilities. The adversary can employ the CB agents _____, _____, and _____ in the AO at any time delivered by air, cannon, and rocket artillery and by guided missile.

f. () Unconventional Warfare Capability. The adversary can conduct UW operations in the area within 10 days after starting the operation using dissident ethnic elements and the political adversaries of the current government.

g. () Joint Capabilities. The adversary has limited experience in fighting as a joint force and is more accustomed to fighting independently as Services. The adversary can continue to defend in its present position with six infantry divisions, supported by 16 artillery battalions and reinforced by three mechanized divisions, within eight hours after starting movement. Adversary defense also can be supported by 150 fighter sorties daily for a sustained period and by continuous naval surface and air operations employing six DDs, four FFs, seven SSNs, and one CV.

4. () ANALYSIS OF ADVERSARY POTENTIAL COURSES OF ACTION. Analyze each capability in light of the assigned mission, considering all applicable factors from Paragraph 2, and attempt to determine and give reasons for the relative order of probability of adoption by the adversary. An examination of each adversary COA should include a discussion of the factors that favor or militate against their adoption by the adversary and when applicable, adversary vulnerabilities attendant to that COA (i.e., conditions or circumstances of the adversary situation that render the adversary especially liable to damage, deception, or defeat). Finally, the analysis should also include a discussion of any indications that point to possible adoption of the COA. For example:

a. () Attack now with forces along the forward edge of the battle area . . .

(1) () The following factors favor the adversary's adoption of this COA:

(a) () . . .

(b) () . . .

(2) () The following factors militate against the adversary's adoption of this COA:

(a) () Road and rail networks will not support large-scale troop and supply movements necessary for an attack in the area.

(b) () Terrain in the area does not favor an attack.

(3) () Adoption of this COA will expose the adversary's west flank to counterattack.

(4) () Except for minor patrol activity in the area, there are no indications of adoption of this COA.

b. () Delay from present positions along the river line . . .

(1) () The following factors favor the adversary's adoption of this COA:

(a) () There are several excellent natural barriers between the ____ River and the ____ Mountains.

(b) () The effectiveness of the water barriers will improve, and trafficability on the upland slopes of the terrain barriers will deteriorate with advent of the monsoon.

(2) () The following factors militate against the adversary's adoption of this COA:

(a) () . . .

(b) () . . .

(3) () In the adoption of this COA, the adversary's lines of communication will be restricted by a limited road and rail network that can easily be interdicted.

(4) () The following facts indicate adoption of this COA:

(a) () Aerial photography indicates some preparation of barriers in successive positions.

(b) () Considerable troop movement and prepositioning of floating bridge equipment along the water barriers have been detected.

5. () CONCLUSIONS. Conclusions resulting from discussion in Paragraph 4 include, when possible, a concise statement of the impact of each capability on the accomplishment of the assigned friendly mission. Cite adversary vulnerabilities where applicable. This paragraph contains a summary of adversary COAs most likely to be adopted, listed in the order of relative probability if sufficient information is available to permit such an estimate. Exploitable vulnerabilities should also be listed where applicable.

a. () Adversary COAs in Relative Probability of Adoption.

(1) () Defend in present locations with . . .

(2) () Delay from present positions along . . .

(3) () Reinforce the defense or delay with . . .

(4) () Conduct UW operations in the area . . .

b. () Vulnerabilities.

(1) () Adversary left (west) flank is open to envelopment by amphibious assault . . .

(2) () The adversary's air search radar coverage is poor in the left (west) portion of its defensive sector . . .

(Signed) _____

—

N-2

(ANNEXES: (By letter and title.) Annexes should be included where the information is in graphs or of such detail and volume that inclusion makes the body of the estimate cumbersome. They should be lettered sequentially as they occur throughout the estimate.

DISTRIBUTION: (According to procedures and policies of the issuing headquarters.)

CLASSIFICATION

ANNEX F-3

Logistics Estimate

UNCLASSIFIED

Issuing Headquarters
Place of Issue
Day, Month, Year, Hour,

Zone

LOGISTICS ESTIMATE NUMBER 001

() REFERENCES:

- a. Maps and charts
- b. Other pertinent documents

1. () MISSION. COMSEVENTHFLT conducts operations in the Strait of Blueand in order to support a United Nations maritime task force, protect U.S. and designated friendly shipping, enforce international law, and ensure continued access to critical lines of communication.

2. () SITUATION AND CONSIDERATIONS.

a. () Characteristics of the Area of Operation. Summarize data about the area, taken from the intelligence estimate or area study, with specific emphasis on significant factors affecting logistics activities.

b. () Adversary Forces. Refer to current issuing HQ staff intelligence estimate.

c. () Friendly Forces.

(1) () Present Disposition of Major Elements. Include an estimate of their strengths.

(2) () Own Courses of Action. State the proposed COAs under consideration, obtained from operations or plans division.

(3) () Probable Tactical Developments. Review major deployments and logistics preparations necessary in all phases of the operation proposed.

d. () Logistics Situation. State known personnel problems, if any, which may affect the logistics situation.

e. () Coordination, and Communications Situation. State the coordination and communications situation, emphasizing known coordination problems that may affect the logistics situation.

f. () Assumptions. State assumptions about the logistical aspects of the situation made for this estimate. Because basic assumptions for the operation already have been made and will appear in

planning guidance and in the plan itself, they should not be repeated here. Certain logistics assumptions may have been made in preparing this estimate, and those should be stated.

g. () Special Features. Special features not covered elsewhere in the estimate that may influence the logistics situation.

h. () Logistics Situation.

(1) () Supply and Service Installations. Describe and give the location of key supply and service installations to be used to support the operation.

(2) () Supply. State availability of prepositioned war reserve stock (PWRS), authorized levels of supply, known deficiencies of supply stocks and supply systems, and responsibilities and policies regarding supply.

(3) () Transportation. List air, sea, and surface transportation availability; coordination; regulations; lift capability; and responsibilities and policies regarding supply.

(4) () Medical Services. Describe availability of evacuation and hospital facilities and medical responsibilities and policies, including the anticipated evacuation policy.

(5) () Civil Engineering Support. List responsibilities for civil engineering support, limiting factors, and other appropriate considerations.

(6) () Miscellaneous. Include other logistics matters not considered elsewhere that may influence selection of a specific COA. Include identification of known deficiencies of combat service support. Include civil and indigenous materiel resources available or essential to support military operations. Also, consider the requirement to meet minimum essential needs of civil populace for whom the commander may become responsible.

3. () LOGISTICS ANALYSIS OF OWN COURSES OF ACTION. Make an orderly examination of the logistics factors influencing the proposed friendly COAs. The objective of this analysis is to determine if the logistics requirements can be met and to detail the logistics implications that should be weighed by the commander. Throughout the analysis, keep logistics considerations foremost in mind. The analysis is not intended to produce a decision; it is intended to ensure that all applicable logistics factors have been properly considered and to serve as the basis for the comparisons in Paragraph 4.

a. () Analyze each COA from the logistics point of view. The detail in which the analysis is made is determined by considering the level of command, scope of contemplated operations, and urgency.

b. () For each COA under consideration, analyze the logistics factors described in Paragraph 2. Examine these factors realistically from the standpoint of requirements versus actual or programmed capabilities, climate and weather, oceanography and hydrography, time and space, adversary capabilities, and other significant factors that may have an impact on the logistics situation as it affects the COAs.

4. () COMPARISON OF OWN COURSES OF ACTION.

a. () List the advantages and disadvantages of each proposed COA from the N-4's point of view.

b. () Use a worksheet similar to that used for the commander's estimate, if necessary.

5. () CONCLUSIONS.

a. () State whether or not the mission set forth in Paragraph 1 can be supported from a logistical standpoint.

b. () State which COA under consideration can best be supported from a logistical standpoint.

c. () Identify the major logistics deficiencies that must be brought to the commander's attention. Include recommendations concerning the methods to eliminate or reduce the impact of those deficiencies.

(Signed)_____

N-4

ANNEXES: (By letter and title.) Use annexes when the information is in graphs or is of such detail and volume that inclusion in the body makes the estimates too cumbersome. Annexes should be lettered sequentially as they occur throughout the estimate.

DISTRIBUTION: (According to procedures and policies of the issuing headquarters.)

CLASSIFICATIONINTENTIONALLY BLANK

ANNEX F-4

Information Operations Estimate

CLASSIFICATION

Issuing Headquarters
Place of Issue
Day, Month, Year, Hour,

Zone

INFORMATION OPERATIONS (IO) ESTIMATE NUMBER _____

() REFERENCES:

- a. Maps and charts
- b. Other pertinent documents

1. () MISSION. State the mission of the command as a whole, taken from the commander's mission analysis, planning guidance, or other statements.

2. () SITUATION AND CONSIDERATIONS.

a. () Characteristics of the Area of Operation. Summarize data about the area, taken from the intelligence estimate or area study, with specific emphasis on significant factors affecting IO activities. Include strategic communication and guidance from DOS and the CCDR.

b. () Adversary Forces.

(1) () Strength and Dispositions. Refer to current intelligence estimate.

(2) () Adversary Capabilities. Discuss adversary capabilities, taken from the current intelligence estimate, with specific emphasis on their impact on the IO situation.

c. () Friendly Forces.

(1) () Present Disposition of Major Elements. Include an estimate of their strengths.

(2) () Own Courses of Action. State the proposed COAs under consideration, obtained from operations or plans division.

(3) () Probable Tactical Developments. Review major developments and IO preparations necessary in all phases of the proposed operation. IO capabilities against the adversary should be included.

d. () Personnel Situation. State known personnel problems that may affect the IO situation.

e. () Logistics Situation. State known logistics problems that may affect the IO situation.

f. () Assumptions. State assumptions about the IO aspects of the situation. Because basic assumptions for the operation already have been made and will appear in planning guidance and in the plan itself, they should not be repeated here. Certain IO assumptions may have been made in preparing this estimate, and those should be stated here.

g. () Special Features. State special features that are not covered elsewhere in the estimate but that may influence the IO situation.

h. () Command, Control, Communications, and Computer Situation. Consider line-of-sight communications, satellite communications, ground mobile command posts, the DSCS ground mobile segment, and DCS interface, etc.

(1) () C2 Communications.

(2) () Administrative Communications.

(3) () Communications Intelligence.

(4) () Communications Security.

(5) () Communications Support for Combat Operations.

(a) () Joint Tactical Air Operations.

(b) () Air-to-Ground Operations (CAS and air interdiction).

(c) () Naval Surface Fire Support Operations.

(6) () Communications Control and Aids for Supporting Arms.

(7) () Communications Requirements for Other Activities.

(8) () Computer Networks

3. () SYSTEM SUPPORT AND ANALYSIS OF OWN COURSES OF ACTION. Make an orderly examination of the IO factors influencing the proposed COAs. The objective of this analysis is to determine the IO implications that should be weighed by the commander.

a. () Analyze each COA from an IO point of view. The detail in which the analysis is made is determined by considering the level of command, scope of contemplated operations, and urgency.

b. () The IO factors in Paragraph 2 are analyzed for each COA under consideration. Examine these factors realistically and include appropriate considerations of local culture, adversary capabilities and vulnerabilities, and other significant factors that may affect the IO situation as it affects the COAs.

c. () Throughout the analysis, keep IO foremost in mind. The analysis is not intended to produce a decision but to ensure that all applicable factors have been properly considered and to serve as the basis for the comparisons in Paragraph 4.

4. () COMPARISON OF OWN COURSES OF ACTION.

- a. () List the advantages and disadvantages of each proposed course of action from the N-6's point of view.
- b. () Use a worksheet similar to the one in the commander's estimate, if necessary.

5. () CONCLUSIONS.

- a. () State whether or not the mission set forth in Paragraph 1 can be supported from an IO standpoint.
- b. () State which COA under consideration can best be supported from an IO standpoint.
- c. () Identify the major IO deficiencies that must be brought to the commander's attention. Include recommendations concerning the methods of eliminating or reducing the impact of those deficiencies.

(Signed) _____

N-39

ANNEXES: (By letter and title.) Use annexes when the information is in graphs or is of such detail and volume that inclusion in the body makes the estimates too cumbersome. They should be lettered sequentially as they occur throughout the estimate. Subject areas that should be discussed are communications security, IO systems protection (including identification of initial nodes), and communications planning.

DISTRIBUTION: (According to procedures and policies of the issuing headquarters.)

CLASSIFICATION

ANNEX F-5

Civil-Military Operations Estimate

CLASSIFICATION

Issuing Headquarters
Place of Issue
Day, Month, Year, Hour, Zone

CIVIL-MILITARY OPERATIONS (CMO) ESTIMATE NUMBER (Include the CMO estimate number.)

REFERENCES: List maps, charts, CMO-related documents, and local command guidance.

1. () MISSION. State the mission as determined by the commander.

2. () SITUATION AND CONSIDERATIONS.

a. () Intelligence Situation. Include relevant information obtained from the intelligence estimate.

(1) () Characteristics of the area of operations. Identify physical features, climate, and basic political, economic, and psychological factors that are significant to CMO.

(a) () Attitudes of the population (cooperative or uncooperative).

(b) () Availability of basic necessities (food, clothing, water, shelter, and medical care), including civilian capabilities of self-support.

(c) () Availability of local material and personnel to support military operations.

(d) () Number of dislocated civilians in the area.

(e) () Amount and type of war damage suffered by the economy (particularly in transportation, public utilities, and communications).

(f) () Status and character of the civil government.

(g) () Status and location of NGOs and IGOs in the area.

(h) () State of health of the civilian populace.

(2) () Adversary strength and dispositions.

(3) () Adversary capabilities. Consider sabotage, espionage, subversion, terrorism, and movement of dislocated civilians.

- (a) () Affecting the mission.
 - (b) () Affecting CMO activities.
- b. () Friendly Situation. Include information on friendly forces/organizations/capabilities/resources that can affect CMO.
- (1) () Present dispositions of major tactical elements.
 - (2) () Possible COAs to accomplish the mission.
 - (3) () Projected operations and other planning factors required for coordination and integration of staff estimates.
- c. () Personnel Situation. Include information on CMO personnel capacity.
- (1) () Present dispositions of personnel and administration units and installations that affect the CMO situation.
 - (2) () Projected developments within the personnel field likely to influence CMO.
- d. () Logistics Situation. Include information obtained from the logistics officer.
- (1) () Present dispositions of logistics units and installations that affect the CMO situation.
 - (2) () Projected developments within the logistics field likely to influence CMO.
- e. () CMO Situation. Discuss the status of the CMO situation. In the case of detailed information at higher levels of command, a summary may appear with reference to an annex to the estimate.
- (1) () Disposition and status of CA elements and related significant military and nonmilitary elements.
 - (2) () Current problems faced by the command. Estimate the impact of future plans of the supported unit's operation pertinent to the CMO mission.
 - (3) () Projected impact of civilian interference with military operations.
 - (4) () Government functions.
 - (a) () Legal.
 - (b) () Public administration.
 - (c) () Public education.
 - (d) () Public health.
 - (e) () Public safety.

(5) () Economic functions.

- (a) () Civilian supply.
- (b) () Economic development.
- (c) () Food and agriculture.

(6) () Public facilities functions.

- (a) () Public communications.
- (b) () Transportation.
- (c) () Public works and utilities.

(7) () Special functions.

- (a) () Civil information.
- (b) () Cultural relations.
- (c) () Dislocated civilians.
- (d) () Emergency services.
- (e) () Environmental management.

f. () Assumptions. Until specific planning guidance becomes available, give CMO assumptions required to initiate planning or to prepare the estimate. Modify the assumptions as factual data become available.

3. () ANALYSIS OF COURSES OF ACTION. Analyze all CMO factors indicating problems and deficiencies of each COA.

4. () COMPARISON OF COURSES OF ACTION.

a. () Evaluate CMO deficiencies and list the advantages and disadvantages of each proposed COA.

b. () Discuss the advantages and disadvantages of each tactical COA under consideration from the CMO standpoint. Eliminate ones that are common to all COAs or ones that are minor. Include methods of overcoming deficiencies or modifications required in each COA. Priority is on one major CA activity that most directly relates to the mission--for example, preventing civilian interference with tactical and logistical operations.

5. () CONCLUSIONS OR RECOMMENDATIONS.

a. () Indicate whether the stated mission can be supported from the CMO standpoint.

b. () Indicate the COA best supported from the CMO standpoint.

c. () List the primary reasons other COAs are not favored.

d. () List the major CMO problems that must be brought to the commander's attention. Include specific recommendations on the methods of eliminating or reducing the effect of these deficiencies.

(Signed)_____

ANNEXES: (By letter and title.) Use annexes when the information is in graphs or is of such detail and volume that inclusion in the body makes the estimates too cumbersome. They should be lettered sequentially as they occur throughout the estimate.

DISTRIBUTION: (According to procedures and policies of the issuing headquarters.)

CLASSIFICATION

INTENTIONALLY BLANK

ANNEX F-6**COMMANDER'S ESTIMATE**

CLASSIFICATION

Issuing Headquarters
 Place of Issue
 Day, Month, Year, Hour,

Zone

- () REFERENCES: a. Maps and charts
 b. Other pertinent documents

1. () MISSION. State the assigned or deduced task and its purpose. If there are multiple missions, determine priorities. List any intermediate tasks, prescribed or implied, necessary to the accomplishment of the mission.

2. () THE SITUATION AND COURSES OF ACTION.

a. () Considerations Affecting the Possible Courses of Action. Determine and analyze those factors that will influence the choice of a COA as well as those that affect the capabilities of the adversary. Consider each of the following and other factors and include under each a statement of each fact (or assumption if necessary) and deduce the probable influence on adversary or friendly actions.

(1) () Characteristics of the Area of Operations.

(a) () Military Geography.

1. () Topography. Consider factors of relief, vegetation, surface materials, and similar characteristics as they affect such elements of an operation as observation, maneuver, fire support, concealment, cover, air and surface movement, lines of communication, avenues of approach, key terrain, biological and chemical weapons employment, electronic emissions of all types, and unconventional, psychological, and other significant activities.

2. () Oceanography and Hydrography. Include the characteristics of offshore sea areas, approaches to the beaches, currents, tides, the beaches themselves, ports, docks, and similar maritime considerations.

3. () Climate and Weather. Extremes of temperature, wind velocities, cloud cover, visibility, precipitation, and other factors that can affect military operations should be determined and presented. Sunrise, sunset, and twilight data are normally given in this subparagraph.

(b) () Transportation. Indicate characteristics of roads, railways, inland waterways, and airfields, including such factors as size, capacity, conditions, and other facts that affect adversary capabilities and friendly courses of action.

(c) () Telecommunications. List radio, SATCOM, landline, and other communications facilities in the AO that might aid in command and control of military forces. Facilities considered in this subparagraph are not those in the organic capability of the opposing forces, but rather those already established in the area.

(d) () Politics. Include such considerations as political stability, alliances, relations with other countries, aspects of international law, control over subversion and dissidence, and other factors that may influence the selection of a COA. Neutrality or belligerency of neighboring states is often listed here.

(e) () Economics. Include the organization of the economy and its mobilization capacity, the industrial base of the adversary to support hostilities, finance, foreign trade, and similar influences as they affect selection of a COA.

(f) () Sociology. Consider social conditions that might range from the psychological ability of the populace to withstand the rigors of war, to health and sanitation conditions in the AO. Language, social institutions and attitudes, and other factors that may affect the selection of a COA must be considered.

(g) () Science and Technology. Although little immediate military impact may result from the state of science and technology in a target area, consider the long-range effects of such factors as the technical skill level of the population and scientific and technical resources in manpower and facilities and how they may affect the choice of COA.

(2) () Relative Combat Power.

(a) () Adversary.

1. () Strength. Give number and size of adversary units committed and those available for reinforcement. This is not intended to be just a tabulation of numbers of aircraft, ships, missiles, or other military weaponry, but a study of what the adversary commander can bring to bear in the area in terms of ground units committed and reinforcing, aircraft sortie rates, missile delivery rates, unconventional, psychological, and other strengths.

2. () Composition. Include major adversary combat formations, equivalent strengths of adversary and friendly units, and major weapon systems and armaments in the adversary arsenal and their operational characteristics.

3. () Location and Disposition. Indicate the geographic location of adversary units; fire support elements; command and control facilities; air, naval, and missile forces; and other combat power in or deployable to the AO.

4. () Reinforcements. Estimate adversary reinforcement capabilities that can influence the AO. This study should include ground, air, naval, and missile forces; nuclear, biological, chemical, and other advanced weapon systems; and an estimate of the relative capacity to move these forces to, and within the AO.

5. () Logistics. Summarize the adversary capabilities with which they have been credited, and include such considerations as supply, maintenance, hospitalization and

evacuation, transportation, labor, construction, and other essential logistic means. Broadly speaking this is a feasibility test for adversary capabilities.

6. () **Time and Space Factors.** Estimate where and when adversary forces and reinforcements can initially be deployed and employed. Such a study normally includes distances and travel times by land, sea, and air from major bases or mounting areas into the AO.

7. () **Combat Efficiency.** Estimate the adversary state of training, readiness, combat experience, physical condition, morale, leadership, motivation, doctrine, discipline, and whatever significant strengths or weaknesses may be derived from the preceding paragraphs.

(b) () **Friendly.** In general, follow the same pattern used for analysis of the adversary when appraising the commander's own force. The description of what to consider and the approach outlined in subparagraph 2a (2) (a) apply to the analysis of friendly forces.

(3) () **Assumptions.** Assumptions are important factors on which the conduct of the operation is based and must be noted as such.

b. () **Adversary Capabilities.** State the adversary capabilities that can affect the accomplishment of the commander's mission. (Adversary capabilities are obtained from the intelligence estimate of the situation.)

c. () **Own Courses of Action.** State all valid COAs open to the commander that could accomplish the mission.

3. () **ANALYSIS OF OPPOSING COURSES OF ACTION.** Determine the probable effect of each adversary capability on the success of each of the commander's own COAs.

4. () **COMPARISON OF OWN COURSES OF ACTION.** Weigh the advantages and disadvantages of each of the friendly COA with respect to the evaluation criteria. Decide which course of action promises to be the most successful in accomplishing the mission.

5. () **DECISION.** Translate the COA selected into a concise statement of what the force as a whole is to do and as much of the "when", "where", "how", and "why" as may be appropriate.

(Signed) _____
Commander

ANNEXES: (As required, by letter and title.)

DISTRIBUTION: (According to policies and procedures of the issuing headquarters.)

ANNEX F-7

ESTIMATE of SUPPORTABILITY

ESTIMATE OF SUPPORTABILITY (U)

(U) REFERENCES: (a) Charts (b) Previous directives, etc.

1. () Mission

a. () Basic Mission. List the issuing HQ's mission. If this is a running estimate early in the planning process, the mission statement may not be complete. In this case, identify what actions are needed to take as part of the HHQ COA(s).

b. () Previous Decisions.

(1) () List in detail each essential task already assigned to the issuing headquarters.

(2) () These essential tasks should contribute to the current HHQ COA(s) under consideration.

2. () Situation and Considerations

a. () Adversary

(1) () Present disposition of major elements. (See intelligence estimate.)

(2) () Capabilities. (See intelligence estimate)

b. () Population. Disposition of the population, such as attitudes toward the insurgents, host nation, and allied or coalition forces.

c. () Own Forces

(1) () Present disposition of the issuing HQ major sub-elements.

(2) () Probable tactical developments.

(a) () Summarize intended actions required to support each COA.

(b) () Estimate timelines when assigned tasks (or envisioned actions) are expected to be achieved under each COA being considered.

(3) () Own COAs.

(a) () COA #1. Describe in general terms (enough to give an overall picture and to distinguish it from the other COA[s]). If COAs are still in development, describe the distinguishing features. For example, "This COA will have an amphibious assault."

(b) () COA #2 (and subsequent COAs). Describe in general terms.

(c) () Describe the characteristics of the geographic area in which the operation is to be conducted. Provide cultural considerations or other aspects of the area that may affect operations. Readers may be referred to the intelligence estimate.

d. Assumptions

(1) () List all assumptions regarding the adversary, friendly, and population situation.

(2) () List assumptions about adversary and friendly capabilities.

(3) () List assumptions about adversary and population intentions.

e. () Special Factors. List any special aspects of the situation that could affect resource allocation.

3. () COA Analysis

a. () Ranks the COAs under consideration by HHQ according to the ability of the commander to support them.

b. () Concept of Employment. Describe the concept of employment for each of the HHQ COA(s).

c. () Adversary Situation and Capabilities. Describe how the adversary's situation and capabilities might affect the ability to support each or any of the HHQ COA(s).

d. () Requirement for Support. Explain how and to what degree the commander can support each of the HHQ COA(s). In order for the maritime commander to determine the ability to support HHQ COAs, he must be aware of the requirements for all other elements of the maritime force (e.g., consider all demands on the force that could be independent of and running concurrently with the plan or order being evaluated).

e. () Topography. As applicable, describe how the topography might affect the ability to support each or any of the HHQ COA(s).

f. () Weather. Describe how the weather might affect the ability to support each or any of the HHQ COA(s).

g. () Observation and Surveillance. The issuing headquarters describes how the observation and surveillance issues might affect its ability to support each or any of the HHQ COA(s).

h. () Communications Requirements. The issuing headquarters describes how the communications issues might affect its ability to support each or any of the HHQ COA(s).

i. () Logistics. The issuing headquarters describes how the logistic issues might affect its ability to support each or any of the HHQ COA(s).

j. () Hydrographic Conditions. The issuing headquarters describes how the hydrographic issues might affect its ability to support each or any of the HHQ COA(s) during amphibious operations.

k. () Other Considerations. The issuing headquarters describes any other considerations that the commander and staff assess as important to its organization's ability to support HHQ COAs.

4. () Evaluation

a. () COA #1

(1) () Advantages

(a) () List the advantages of this COA specific to the issuing headquarters, not necessarily to the force as a whole.

(2) () Disadvantages

(a) () List the disadvantages of this COA specific to the issuing headquarters, not necessarily to the force as a whole.

b. () COA #2

(1) () Advantages

(2) () Disadvantages

5. () Conclusions

a. () Identify the preferred COA and rationale for its choice.

b. () Rank any other COAs with the rationale for their order.

c. () Recommend any changes to one or more of the COA(s) based on the ability to furnish support.

APPENDIX G: Sample Decision Matrix

The decision matrix is simply a staff planning decision aid and should be viewed as such. It portrays **subjectively chosen evaluation criteria** and helps in differentiating COAs. The strength of the matrix is that it allows the commander and staff to review systematically the specific important strengths and weaknesses of each COA. **Since non-like evaluation criteria are being compared, the matrix is not intended to provide a scientific or mathematical solution for what is a decidedly subjective process.**

Staff members may each use an individual matrix or may recommend evaluation criteria based on respective functional area staff estimates. The evaluation criteria list need not be a lengthy one, but it must be thorough enough to differentiate the COAs and reflect the commander's governing factors (see page 2-18). The evaluation criteria should, at a minimum, reflect the concerns expressed by the commander in his intent statement and planning guidance. The result obtained is not meant to be absolute or objective in nature. However, if the same criteria are ruthlessly applied to each COA, then the relative ranking (or faults) of each should become readily apparent.

This appendix offers a sampling of some of the most frequently encountered decision matrices (nonweighted, weighted, advantages / disadvantages, and pluses/ minuses / neutral comparison matrix)—undoubtedly, one will encounter other methods that serve the same purpose. The weighted / nonweighted matrices might use numbers or pluses and minuses to assess strengths and weaknesses. Organizational SOPs and individual planning group preferences will dictate the chosen method. **No matter which method is employed, planning groups should remember that the matrix is an aid, and the commander need only know the insights from the planning group's comparison and not the particulars of a decision matrix.**

Sample Nonweighted and Weighted Decision Matrices

Some general guidelines for creating the decision matrix:

1. Having determined the evaluation criteria, ensure that each is defined so its meaning is understood by all. For example, simply listing "Risk" as an evaluation criterion is insufficient. Does this mean risk of casualties, risk to mission accomplishment, or something else? The planning staff must explain what each criteria means before assessing values.
2. Prioritize evaluation criteria by overall importance.
3. The planning group assigns numerical values for each evaluation criteria to the COA. These values reflect the relative advantages or disadvantages of each evaluation criteria for each COA. There is no requirement to rank each COA evaluation criteria against the others (i.e., any number of COAs can receive the same assessment score for a particular evaluation criteria).

4. Total values reflect the relative strengths and weaknesses for each COA. This is the primary value of these matrices. The most advantageous COA is often the one with the highest total number; **however, selection of a numerically superior COA may not always be the best recommendation.** The planning group may determine that there is only a small numerical difference between the totals.
5. Above all else, the staff must remember that this matrix is simply a tool to gain a greater insight into the various COAs. If one COA scores more favorably in one evaluation criteria than the other COAs, the planning staff should determine the source of this advantage. If that source of strength can be replicated in the other COAs and still maintain distinguishability between the COAs, then the staff should consider adjusting the other COAs to accommodate this insight. If this adjustment occurs, however, the staff should re-wargame the changed COAs to ensure no new risk/liability is introduced into the modified COAs.

Table G-1 shows a nonweighted comparison matrix. The difference between weighted and nonweighted comparison matrices is a subjective weight factor, as shown in the second column of Table G-2. The weights are multiplied by the initially assigned assessment score in each column.

Table G-1 Nonweighted Comparison Matrix

EVALUATION CRITERIA	COA # 1	COA # 2	COA # 3	COA # 4
SIMPLICITY	2	1	4	3
SURPRISE	2	3	3	4
SPEED	1	2	3	4
MASS	3	1	2	4
RISK	4	3	4	4
FLEXIBILITY	3	3	4	3
SUSTAINABILITY	3	3	2	3
SPAN OF CONTROL	3	2	1	3
TOTAL	21	18	23	28

EVALUATION CRITERIA	WT	COA # 1		COA # 2		COA # 3		COA # 4	
SIMPLICITY	3	2	6	1	3	4	12	3	9
SURPRISE	1	2	2	3	3	3	3	4	4
SPEED	2	1	2	2	4	3	6	4	8
MASS	4	3	12	1	4	2	8	4	16
RISK	2	4	8	3	6	4	8	4	8
FLEXIBILITY	4	3	12	3	12	4	16	3	12
SUSTAINABILITY	3	3	9	3	9	2	6	3	9
SPAN OF CONTROL	3	3	9	2	6	1	3	3	9
TOTAL		21		18		23		28	
WEIGHTED TOTAL			60		47		62		75

Table G-2 Weighted Comparison Matrix

1. Numerical values for each evaluation criteria are assigned after the COA is war-gamed. These values reflect the relative advantages or disadvantages of each evaluation criteria for each COA.
2. These numbers provide a subjective evaluation of the best COA without weighting one evaluation criteria over another.
3. The weights are multiplied by the initially assigned score in each column.
4. Scores are totaled to provide a “best” COA based on weights assigned by the commander.
5. There is no requirement to rank each COA evaluation criteria (i.e., all three COAs can receive the same assessment score for a particular evaluation criteria).

Sample Positive, Negative, and Neutral Courses of Action Comparison

There are other recording techniques that can be used by the JPG/OPG. The staff can assign + (for strengths), -- (for weaknesses), and 0 (for neither a strength nor weakness) and then add up the results. The COA with the largest number of +s is assessed as “best.” See Table G-3 for an example.

EVALUATION CRITERIA	COA #1	COA #2	COA #3	COA #4
SIMPLICITY	0	-	+	+
SURPRISE	0	+	+	+
SPEED	-	0	+	+
MASS	+	-	0	+
RISK	+	+	+	+
FLEXIBILITY	+	+	+	+
SUSTAINABILITY	+	+	0	+
C2	+	0	-	+
TOTAL	4 +	2 +	4 +	8 +

Table G-3 Plus/Minus/Neutral Comparison Matrix

Sample Advantages and Disadvantages Comparison Matrix

Comparing the advantages and disadvantages is perhaps the most valuable part of the decision process, as it is here that the tradeoffs between the COAs should be most apparent. The advantages and disadvantages of any particular COA could be quite lengthy and detailed. Many advantages and disadvantages should be carried forward from this step. Performance relative to the MOE developed during the analysis phase and any evaluation criteria (s) established by the commander can be used as well.

In completing the chart, list the advantages and disadvantages of each COA retained. When considering disadvantages of each COA, consider what additional actions, if any, might be taken to reduce or overcome the disadvantages made evident by the analysis. To maintain an unbiased approach in COA selection, actions proposed to overcome disadvantages in one COA must be applied to all COAs, where appropriate. See Table G-3.

COA	ADVANTAGE	DISADVANTAGES	MODIFICATIONS
COA #1 HEAVY	<ul style="list-style-type: none"> • Operational Flexibility • Rapid combat phase 	<ul style="list-style-type: none"> • Log Supportability • Slow Deployment 	<ul style="list-style-type: none"> • Obtain ISB • Pre-deploy assets in FDO
COA #2 LIGHT	<ul style="list-style-type: none"> • Rapid Deployment • Minimal U.S. presence • Logistics 	<ul style="list-style-type: none"> • Higher risk if the most dangerous adversary COA takes place • Might be insufficient for deterrence • Could display a lack of U.S. resolve 	<ul style="list-style-type: none"> • Establish a decision point for movement to a larger force. • Expand coalition role
COA #3 SOF LEAD	<ul style="list-style-type: none"> • Rapid Deployment • Minimal U.S. presence • Logistics • Allows for rapid exit strategy 	<ul style="list-style-type: none"> • Same issues as COA #2 • Requires larger Coalition role • Lack of flexibility in the face of unforeseen events 	<ul style="list-style-type: none"> • Position a robust operation reserve in the JOA

Table G-3 Advantages and Disadvantages Comparison Matrix

APPENDIX H: Joint Synchronization Matrix

The Joint Synchronization Matrix is a staff *decision and planning aid* that graphically reflects the *joint*³⁶ execution of an operation over a specific time period. Once completed, the matrix will provide the staff:

- A graphic portrayal of the synchronization of subordinate tasks during the operation and a means to refine the synchronization of events / actions that did not receive detailed attention during the earlier planning steps.
- A graphic portrayal of the key decision points for the operation.
- A clear focus for supporting activities (logistics, IO, Intelligence collection, etc.).
- A means to identify and prioritize branch planning requirements.
- A graphic portrayal of the plan / order—with a completed matrix in hand, a single planner can now quickly develop the base plan /order.

The construction of the matrix should begin during the wargame (see STEP 3 of the planning process on page 3-1) in the form of a wargaming worksheet; however, the full value of the matrix is most often realized after the commander has approved a course of action (COA) and the operational sequencing of the operation has been established.

Upon receipt of the commander's decision (STEP 5 of the planning process), the planning staff should assemble and complete the matrix. The organizational mechanics of the how the staff completes the matrix are the same as used during the wargame as described in STEP 3 of this workbook.

The first two decisions that must be made are: 1. Will the matrix synchronize by event or time period (or a combination thereof)? 2. What forces / functions and activities will the matrix synchronize? There are no hard and fast answers to these questions, and they are most often tailored to the given situation. Consider the following for each of these decisions:

- **Forces / Activities.** Along the left column of the matrix, the staff will list the forces, activities, and decisions to be synchronized. The minimum requirement for listing is for all the commands that will be tasked in the order. Most staffs also find useful to list any activities that will be in support of the operation (such as logistics, IO, Intelligence) as well as organizations / forces not under your control but important to your operations (NGOs, UN, Host nation, allied force, etc.). See the example matrix; figure H-1, on page H-3.
- **Time³⁷ or Event.** The top line of the matrix is for the time period or events to be synchronized. As a rule of thumb, there is a proportional reduction in the granularity of synchronization as the time period broadens. So, for example, if the staff chooses to simply synchronize by operational phase, it will likely fail to expose all

³⁶ Though this matrix is being used for joint synchronization, component-level commanders also use this tool for synchronization of their subordinate elements with the joint force operation.

³⁷ See Appendix J for a summary of operational time definitions.

synchronization requirements if there are multiple critical events executed during each phase of the operation. On the other hand, a detailed day by day synchronization matrix could create an ungainly tool. With these considerations in mind, staffs often find most useful to use a combination of the two. For the early phases, smaller time periods or multiple events are listed, while the latter phases are not broken down further. This technique allows for detailed synchronization of the events that are near term (and the ones we know most about) and less detail for those phases that are further down the road and will most likely be less precise in our detailed understanding. The detailed examination of the earlier phase(s) also allows for a sharper focus upon force closures—especially important if critical capabilities are not in place in the AO/JOA and their arrival supports a specific event. See the example matrix; figure H-1, on page H-3.

	PHASE I Shaping OPS	PHASE II Forced Entry OPS	PHASE III Force Build-up	PHASE IV Decisive OPS	PHASE V Stabilization/ Redeployment	
TIME C DAY/DDAY /HHOUR	Pre-Forced Entry Ops D Day H-10 to H+3	Forced Entry Ops D Day H+3 to H+15	Forced Entry Ops D Day H+15 to H+24	Follow-On Deployment Ops D+1 to D+2	Decisive Ops D+2 to D+8	Hand-Over Redeployment Ops D+8 to D+45
JFLCC	-Abn Forces at ISB -Establish coord w/JSOCC forces in JOA	-ABN Forces to Airtld/Obj DOG	-Occupy Airtld -Block Posim at Obj DOG	-Continue Deploy Air Landed Forces	-Accept MEU -Destroy RGB/Terrorists	-Handover Ops -Redeploy Forces -Transition
JFMCC	-Destroy Redland Maritime Forces -B/P to conduct Amphib Ops -Spt Deception Ops	-Maintain Maritime Superiority	-Psn MEU for B/P Msn		-Deploy MEU CHOP to JFLCC	-Redeploy Maritime Assets
JFACC	-Gain Air Superiority -Destroy/Neutral Enemy RGB/C2	Spt Forced Entry	-Expand Air Superiority in Redland	Spt JFLCC Ops	-Support MEU Ops	-Redeploy Air Assets
JSOCC	-Insert forces for Surv/Targeting 3 RGB.	Spt Forced Entry	-Expand Surv/Terrorist Trng Camps		-Support MEU Ops	-Drawdown and Redeploy SOF
JPOTF	-Spt Decep Ops -Gain Spt of Civ Pop			Surrender of Red Forces		Prepare Civ pop for drawdown
INTEL	-Are conditions set for forced entry? -Success of Deep Plan	Status of 2 & 3 RGB Reaction of Redland civ pop	Status of 1 RGB and poss MEU landing sites			-Reduce Intel Ops/Assets
C2	JTF HQ Afloat	B/P to CHOP MEU			-C2 CHOP MEU/JFLCC	-Prepar Xfer C2 Host Nation/Diplomats
LOGISTICS	-ISB in operation SLCs Estab -Prepos In Place	-B/P to flow in lairlanded forces	-Assume control of RED Airtld ops		-Plan in place for redeployment	-Redeploy Assets -Disestablish bases
DECISION POINT 	-When To Initiate Forced Entry	-When To Expand Air Control/ Surv Ops	-When Initiate Phase III F-on Deploy Ops	-When to Conduct Decisive Ops / deploy Meu		-When to Turnover to Host Nation/Diplomats
BRANCHES	-Deep Plan Fails -Air or maritime Superiority not achieved	-2 RGB moves to counter ABN ops	-Occupation of Airtld Fails		-RGB/Terror Not Destroyed	-Hand Over to Host Ctry/Diplomats Delayed

Figure H-1. Example Joint Synchronization Matrix

	PRE-PHASE I OPERATIONS	PHASE I	PHASE II	PHASE III	PHASE IV	PHASE V
TIME						
C DAY/D DAY						
DECISION POINT 						

Figure H-2. Sample Joint Synchronization Matrix

INTENTIONALLY BLANK

APPENDIX I: Plan Rehearsals

(Extracted from the Joint Warfighting Center *JTF Rehearsal Handbook*)

In the complex world of Joint Operations, rehearsals are vital to the successful execution of an Operation Order (OPORD). Joint operations rehearsals allow the joint force staff to practice the OPORD before its actual execution. Through joint operations rehearsals, the Joint Force Commander (JFC) and staff gain an understanding of the concept of operations in its entirety. These rehearsals afford a comprehensive view of the operation, orient the individual joint force components to one another, and more importantly, give each component a thorough understanding of the JFC's intent, priorities, and guidance.

Joint operations rehearsals are conducted at the operational level of war. This yields a much broader perspective than the tactical level. The operational level of war focuses on the deployment and employment of joint force major component forces, commitment and withdrawal from battle, and the arrangement of battles and major operations in the Joint Operations Area (JOA).

Service	Types	Techniques
Army <ul style="list-style-type: none"> • (Field Manual (FM) 5-0 and • Center for Army Lessons Learned (CALL) Newsletter 98-5 	<ul style="list-style-type: none"> • Confirmation Brief • Backbrief • Combined Arms Rehearsal • Support Rehearsal (Fires, logistical support, etc.) • Battle Drill or Standing Operating Procedures (SOP) Rehearsal 	<ul style="list-style-type: none"> • Full Dress Rehearsal • Reduced Force Rehearsal • Area (Terrain) Model Rehearsal • Sketch Map Rehearsal • Map Rehearsal • Radio Rehearsal
Marine Corps (Marine Corps Warfare Pub (MCWP)5-1)	<ul style="list-style-type: none"> • Staff Rehearsal • Integrated Rehearsal • Modified, Integrated Rehearsal 	<ul style="list-style-type: none"> • None identified
Air Force (Air Force Doctrine Document (AFDD) 2-7)	<ul style="list-style-type: none"> • Full Dress Rehearsal • Partial Force Rehearsal 	<ul style="list-style-type: none"> • None identified
Navy (Naval Warfare Publication (NWP) Series)	<ul style="list-style-type: none"> • Amphibious Rehearsal • Assault Rehearsal • Sweep Rehearsal • Unit Rehearsal (e.g., SEALs) 	<ul style="list-style-type: none"> • Complete Rehearsal • Limited Rehearsal

Table I-1. Service Types and Techniques of Rehearsals

Before a Joint Operations Rehearsal can be conducted, the joint force's and the component's OPODs must be synchronized as part of the planning process. Synchronization allows the joint force staff and components to identify and correct major interoperability problems in the concept of operations.

There is limited information concerning joint operations rehearsals in joint publications, and the normal alternative of reverting to Service publications for guidance can cause considerable confusion. Service definitions for "types" and "techniques" of rehearsals, in Table I-1, reveal differing perspectives on this critical aspect of planning and executing operations.

1. General.

Rehearsing is the process of practicing a plan in the time available before actual execution. Rehearsing key combat and logistic actions allows participants to become familiar with the operation and to visualize the plan. This process assists them in orienting themselves to their surroundings and to other units during execution. Rehearsals also provide a forum for subordinate leaders to analyze the plan. However, caution must be exercised in adjusting the plan in order to prevent errors in synchronization. While the joint force may not be able to rehearse an entire operation, the JFC should identify key elements for rehearsal. Rehearsals should always be performed before the execution of an operation. The JFC should not equivocate on rehearsals as they allow the participants to gain a better understanding of his intentions and vision for the operation. The JFC should attend subordinate rehearsals so that he understands components' plans and to ensure his intent is understood.

The operational level rehearsal helps the Commander weave the series of component tactical actions over days and weeks into a campaign or set of major operations that ultimately address the Combatant Commander's requirements for an end state. The operational-level planning horizon has expanded and consequently the vision of the future is more important. At the operational level, the questions that involve future vision are:

- What military (or related political and social) conditions must be produced in the Joint Operations Area (JOA) to achieve the strategic goal? (Ends)
- What sequence of actions is most likely to produce that condition? (Ways)
- How should the resources of the joint force be applied to accomplish that sequence of actions? (Means)
- What is the likely cost or risk to the JTF in performing that sequence of actions?
- Do I have the right forces in the right place at the right time?
- Where am I in relation to my operational end state?
- What should I be doing now to influence events three to five days from now?

2. Types and Techniques of Joint Operations Rehearsals.

a. Types.

- **Staff Only Rehearsals.** This type of rehearsal is internal to the participating JTF or component headquarters staffs or conducted between the JTF and component staffs.
- **Commanders and Staff Rehearsals.** This type of rehearsal is for the JFC, component commanders, and their staffs. The actual participants may vary from only commanders and key staff personnel to full joint force and components' headquarters participation.
- **Partial Force Rehearsals.** This type of rehearsal is a compromise between a Staff Only Rehearsal, a Commander's and Staff Rehearsal, and the resource-intensive Full Force Rehearsal. The ultimate desire is to have representation from as many joint force components as possible.
- **Full Force Rehearsals.** These are the most effective, but also the most resource-intensive types of rehearsals. This technique may involve all participants (Commanders, staffs and units) rehearsing parts or all of the operation.

b. Techniques.

Note: Whenever possible, all joint operations rehearsal techniques should include the exercising of communications personnel, facilities, and circuits that will be used during the actual operation.

- **Map/Chart Technique.** By assembling commanders and a minimum of staff personnel around some type of tactical display (e.g., map, nautical charts, aerial imagery), the rehearsal director leads participants through the operation. Participants are responsible for moving/explaining their actions and counteractions to the adversary's (or others, e.g., third country's) reactions.
- **Area (Terrain) Board Technique.** Same as the previous technique except that some form of area model is used in place of a map/chart.
- **Simulation Supported Technique.** When properly used, simulation provides an opportunity to increase the fidelity of any rehearsal process. Simulations such as the Joint Theater Level Simulation (JTLS) or the Joint Training Confederation (JTC) may be used to actually portray the "execution" of a plan. However, the databases required for this technique have limitations and require time to develop. Therefore, decisions to use them when rehearsing a time-sensitive operation resulting from crisis action planning should be carefully considered.
- **Similar Area Technique.** The Commanders and Staff, Partial Force, and Full Force rehearsal types may use areas (land areas/sea and littoral areas/buildings and structures) that are similar to the actual Joint Operations Area (JOA).
- **Actual Area Technique.** In certain types of operations (such as retrogrades), the JTF may be able to use the actual area in which the operation will take place.

The commander may also direct that numerous, multi-echelon rehearsals be conducted. The factors the commander should consider in making a decision on the numbers, types, and techniques of rehearsals are:

- Available time
- Who will participate
- Operations security considerations
- Area/space availability
- Objectives of the rehearsal

Combining the types and techniques of rehearsals produces the combination of possibilities reflected in Table I-2.

Note: It is feasible for the joint force to use various technologies (e.g., video teleconferencing (VTC) and available collaborative systems) to conduct the Map/Chart, Area (Terrain) Board, and Simulation Supported techniques of rehearsals.

Types	Techniques
Staff Only	<ul style="list-style-type: none"> • Map/Chart Technique • Area (Terrain) Board Technique • Simulation Supported Technique
Commanders and Staff	<ul style="list-style-type: none"> • Map/Chart Technique • Area (Terrain) Board Technique • Simulation Supported Technique • Similar Area Technique • Actual Area Technique
Partial Force	<ul style="list-style-type: none"> • Map/Chart Technique • Area (Terrain) Board Technique • Simulation Supported Technique • Similar Area Technique • Actual Area Technique
Full Force	<ul style="list-style-type: none"> • Map/Chart Technique • Area (Terrain) Board Technique • Simulation Supported Technique • Similar Area Technique • Actual Area Technique

Table I-2. Rehearsal Types and Techniques Combinations

3. Preparing for Joint Operations Rehearsals.

General. Rehearsals at all levels of command are key to ensuring an understanding of the concept of operations, specific responsibilities, timing of actions, and backup procedures to coordinate joint force operations. Rehearsing the entire operation is desirable. However, in time-constrained situations, rehearsals may be abbreviated to focus on the most critical portions of the operation.

Select Type. The Commander should specify the type of rehearsal to be conducted in his “commander’s guidance.” This allows the staff to begin planning for rehearsals, which may be a considerable effort in itself, especially if a Full Force rehearsal is desired. Figure I-1 portrays how the four types of rehearsals vary according to amount of time/resources required and the amount of understanding desired concerning the operation.

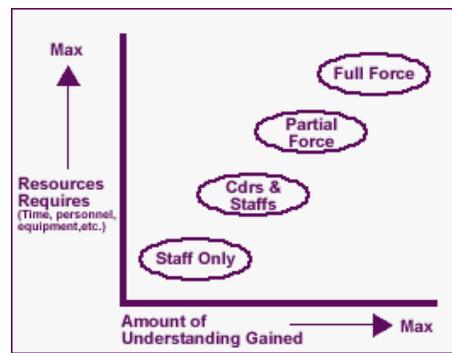


Figure I-1. Selecting Type of Rehearsal

Specify basic rehearsal requirements. The Commander (or designated representative, e.g., J-3, J-5) should:

- Identify and prioritize the events to be rehearsed (e.g., D-Day actions).
- Allocate time for the events being rehearsed.
- Designate attendees.

Determine roles/responsibilities of participants. Examples are:

- **Facilitator.** This is a key billet and one that is fundamental to the success of the rehearsal. The individual assigned as the facilitator should be intimately familiar with the Operations Order (OPORD). Typically this individual has participated in the joint force plan development process as well as the crosswalk between the component and joint force OPORDs. The facilitator should also have a solid understanding of the JFC’s intent. The facilitator keeps the rehearsal on track by adhering to the agenda and ensuring the discussion remains focused on the subject at hand.
- **Red Cell.** The Red Cell portrays a credible threat against which the joint force can rehearse. The credible threat can range from a known adversary force, belligerent

factions in stability, security, transition, and reconstruction operations, or other contingency circumstances such as the weather (rain/snow), natural disasters (hurricanes/earthquakes) and other distracters that could impede mission success. It is important that the Red Cell use individuals with the requisite expertise in the threat they are representing to challenge the JTF actions in a realistic manner. The Red Cell should be an independent group of participants and not “dual hated” to represent both friendly and “adversary” forces and capabilities.

- **Briefers/Role Players.** Role players need to be identified to represent and brief the actions and counteractions of the joint force HQ, Service and/or functional components, and supporting commands and agencies. The role players must understand the details of their respective commanders’ concepts of operation and intents on accomplishing their assigned missions, as well as the capabilities and limitations their respective organizations can bring to bear to support the JFC.
- **Recorder.** A recorder must be identified to capture those items that require further action or coordination. By freeing the training audience of note taking tasks, recorders allow participants to focus their attention on the rehearsal. Effective techniques for the recorder include posting large butcher block paper on the wall of the rehearsal area to capture action items or keeping an overhead projection slide up on a screen. Either of these two techniques allows the rehearsal participants to see what is recorded and helps ensure all required actions are identified.
- **Prepare script.** A script is prepared and used as a tool to control the rehearsal, regardless of the type of rehearsal selected. The script is used to keep the rehearsal on track and as a method for ensuring that key personnel are not overlooked while conducting a rehearsal. A script should consist of the following:
 - **Agenda.** The overall plan for conducting of the rehearsal.
 - Review of the type and technique to be used
 - Ground rules
 - Administrative issues
 - Training objectives and standards to be used
 - Timeline
 - Other issues - Commander’s discretion
 - **Sequence of events.** Exactly what will be rehearsed and in what order.
 - **Sequence of responses.** Role players should respond in some type of logical order or the rehearsal can become disorganized and confusing. A commonly used method to alleviate confusion is the action-reaction-counteraction sequence with role players responding to one another using some prearranged order (e.g., Air Force (AFFOR), Army Forces (ARFOR), Marine Corps Forces (MARFOR), Navy Forces (NAVFOR),

Joint Force Air Component Commander (JFACC), and Joint Special Operations Task Force (JSOTF)).

- **Issue rehearsal instructions.** Some type of order or letter of instruction (LOI) should be developed by the staff to provide specifics concerning the above topics.
- **Assemble resources and support personnel.** Most rehearsals require various types of training aids, sites, security precautions, construction, and so forth, to be coordinated and assembled. In addition, support personnel will be necessary, and their roles and responsibilities must be determined and explained.
- **Prepare site.** Regardless of the type and technique of rehearsal, some type of site preparation is required. Some items to verify are:
 - Site facilities (parking, latrines/heads, buildings, seating, etc.)
 - Site security (operations security and local physical security)
 - Appropriate training aids (maps, area (terrain) boards, audio-visual devices, etc.)
 - Feeding plans/facilities

4. Conducting Joint Operations Rehearsals.

a. Staff Only Rehearsals.

Staff only rehearsals are designed to familiarize the joint force and/or component staffs with the plan or order (e.g., transitioning the plan from one staff section to another) or to practice internal headquarters' procedures before the operation's execution. Explanations of these two variations are provided below.

- **Transitioning the plan.** The value of a plan lies in its ability to be translated into an easily understood and executed order. This transition from plan to order can create difficulties within a joint force or component staff if the staff fails to reach an agreed upon procedure in advance. This procedure should cover which section is responsible for which type of plan and order and, most importantly, how the plan or order moves from one set of planners to others. When transitioning plans or orders from one section to another, all must understand the method of transmission and the form the plan or order will take. One approach is to have a designated planner with a particular operation that moves with the plan from J-5 (Future Plans) to J35 (Future Operations) and then into the J-3 (Current Ops) for execution. The plan gains fidelity as it progresses. This provides the guaranteed presence of a "subject matter expert" if questions arise during plan refinement or execution. Another technique is to provide a formal plan brief conducted by the losing planners (J-5 Future Plans) to the receiving planners/operators (J-3 Current Ops). This provides for a clear transition and ensures unclear concepts or concerns are reviewed. Table I-3 provides a sample sequence of events to accomplish this variation.

- Joint Planning Group (JPG) conducts plans hand-off brief to J-3 Joint Operations Center (JOC) personnel.
- JPG provides to J-3 JOC personnel:
 - Coordinated draft Fragmentary Order (FRAGORD)
 - Course of Action (COA) sketch of applicable branches/sequels
 - Draft execution/synchronization checklist/matrix
- JPG provides clarification as required.
- J-3 JOC accepts planning products for modification and issuance as an order.

Table I-3. Sample “Transitioning the Plan” Sequence of Events

- **Practicing internal procedures.** This form of Staff Only rehearsal practices the internal processes and procedures that a staff is expected to perform during an actual operation. For example, the Joint Targeting Coordination Board (JTCB) should rehearse its agenda and briefing sequence. Using this procedure, the Joint Operations Center (JOC) should rehearse its shift changeover process, or the Rules of Engagement (ROE) Cell should rehearse its meeting process.

Staff Only rehearsals can be conducted by using any of the following techniques:

- Map/Chart Technique
- Area (Terrain) Board Technique
- Simulations Supported Technique

JTF Lessons Learned

- The Chief of Staff should be proactive in ensuring these rehearsals are conducted and adequately attended by the various staff representatives and all Liaison Officers.
- Staff Only rehearsals provide the additional benefit of bringing cohesiveness to a newly formed JTF Headquarters or component staff.

b. Commanders and Staff Rehearsals.

Commanders and Staff rehearsals provide a means for the principal leaders to 1) understand the intent of a JFC with a minimum of disruption to tactical level units and 2) familiarize themselves with the operation before the conduct of either partial force or full force rehearsals. Commanders and Staff rehearsals can be conducted by using any of the following techniques:

- Map/Chart Technique
- Area (Terrain) Board Technique
- Simulations Supported Technique
- Similar Area Technique
- Actual Area Technique

The steps in conducting this type of rehearsal include:

- **Conduct introduction.**

Welcome and introduce the participants.

Explain purpose, overall process (technique), and expected results of the rehearsal.

Review in detail the overall schedule of events.

Explain the “standards” expected to be met throughout this process.

Orientation on all tools (maps, terrain models, synchronization matrices, handouts, etc.).

- **Review the friendly, adversary, and third party situations.**

Review Combatant Commander’s/own mission, intent and concept of operations.

Review overall (not specific) adversary situation.

- **Portray action-reaction-counteraction events.** Starting with the phase, critical event, or timeline the JFC has designated, discuss the components’ **actions**. Then the “Red Cell” presents the anticipated **reactions**. If the plan is well developed, the joint force/components’ **counteraction** should then be presented. When it becomes obvious that changes need to be made to the original plan, record these as either changes to the plan or in fragmentary orders (FRAGORDs). Significant changes can take the form of branch plans.

- **Conduct After-Action Review (AAR).** The commander may wish to conduct an AAR to review lessons learned for future inclusion into the command’s decision-making process. Additionally, the commander may take the opportunity to reiterate Commander’s Intent and make sure changes to the plan or order are understood.

Commander and Staff Rehearsal Sample Agenda
<ul style="list-style-type: none"> ● Facilitator/staff brief: <ul style="list-style-type: none"> Current friendly situation Adversary situation and Courses of Action (COAs) Combatant Commander's mission and intent Command's mission and Commander's intent Command's Task Organization Overall Command's Concept of Operations Key tasks (e.g., critical tasks) Initial command relationships ● Facilitator sets the phase, action, or critical event that is to be rehearsed (e.g., deployment, D-Day events, noncombatant operations). ● Components discuss their actions. ● J-2 (or "Red Cell") portrays the expected adversary reactions (most likely adversary COA). ● Components in turn discuss their counteractions to the adversary's reactions. <p>Note: If the counteraction is a branch or sequel plan, the facilitator must determine if time is available to discuss it or if it should be deferred to a later date. In many cases, the counteraction will only be a "concept" for a branch plan that will be developed and rehearsed later.</p> <ul style="list-style-type: none"> ● Facilitator reviews decisions and necessary follow-on actions (including any changes to the plan or order that are necessitated by the rehearsal). ● Commanders provide summary remarks.

Table I-4. Commander and Staff Rehearsal Sample Agenda

JTF Lessons Learned
<ul style="list-style-type: none"> ● Rehearsals where components merely brief their concept of operations from beginning to end are ineffective since little interaction occurs between components. ● Major changes WILL cause the desynchronization of plans -- the exact opposite of the rehearsal's intent. Keep the changes to an absolute minimum (refinements to the plan). ● The commander should focus on the "seams" of interaction among JTF components. Asking questions about inter-component coordination and cooperation will reveal potential weaknesses.

c. Partial Force Rehearsals.

Partial Force (sometimes called “reduced force”) rehearsals normally require fewer resources (e.g., time, personnel, and materiel) than the Full Force rehearsal but more than the Commanders and Staff rehearsal. Like the Full Force rehearsal, this type is best conducted under the same conditions, weather, time of day and terrain, as the force will encounter during the actual operation. Battle space requirements are the same as the Full Force rehearsal, only the number of participants change. A form of Partial Force rehearsal is commonly called a Training Exercise without Troops (TEWT).

In Partial Force rehearsals, the Commander must first decide the level of leader involvement in the rehearsal. The selected leaders then rehearse the plan while traversing the actual or like terrain. This type is an efficient means of rehearsing particular phases in the operation before a Full Force rehearsal or, if as a substitute for a Full Force rehearsal due to severe time constraints. This rehearsal type is also an excellent way for component commanders to rehearse and understand portions of their individual plans before participating in a Full Force rehearsal. As in the Full Force rehearsal, careful consideration must be given to the component commanders and the tactical units’ timetables before scheduling.

Finding a suitable operating area for a Partial Force rehearsal can be just as difficult as finding an operating area for a Full Force rehearsal. As with the Full Force rehearsal, the time intensive task of developing and issuing a separate operations directive, which mirrors the actual plan, to include operational graphics, is normally accomplished.

d. Full Force Rehearsals

The Full Force rehearsal produces the most detailed understanding of both the mission and the Commander’s Intent. It is also the most difficult type to perform because it notionally involves every individual and system participating in the operation.

Full Force rehearsals are normally the most time consuming of all the rehearsal types. It is particularly important to be sensitive to encroaching on the Functional or Service component’s preparation timelines by scheduling a Full Force rehearsal in a very compressed planning and execution window. Time permitting, Functional and Service components might consider conducting a Partial Force rehearsal before the Full Force rehearsal. While this requires even more time, it is considered time well spent in ensuring the Full Force rehearsal is conducted efficiently. If time cannot be found to conduct a separate component rehearsal, a component might consider conducting a Full Force rehearsal as part of the JTF’s Partial Force rehearsal.

Operations Security (OPSEC) is always a consideration in conducting Full Force rehearsals. The movement of a large body of the JTF and components will certainly attract attention from the adversary. The JTF must develop plans to ensure the Full Force rehearsal is protected from the eyes of the adversary.

Finding a suitable operating area for a Full Force rehearsal can be difficult. If possible, the JTF should conduct this rehearsal under the same conditions, weather, time of day, terrain, and so forth, as the force will encounter during the actual operation. This may include the use of live ammunition. The rehearsal area must be identified, secured, cleared and maintained throughout the rehearsal process. Additionally, the time intensive task of developing a separate operations directive, which mirrors the actual plan, to include operational graphics, is normally accomplished for this type of rehearsal.

5. Choosing the Correct Type or Technique.

There are no “right answers” for the type and technique of rehearsals to conduct. The Commander must consider several factors before making a choice. These include:

- **Available time.** Time is the essential resource and must be carefully considered when determining rehearsal types, techniques and schedules. The time required for a rehearsal varies with the complexity of the tasks to be rehearsed, the type, and technique of rehearsal used. It is usually advantageous to give the priority of rehearsal time to the lowest level units. Focusing on the critical events of the operation can also save time.
- **Participation.** The Commander must provide guidance concerning who should be involved in the rehearsal. If the Commander wishes that all joint force members participate in the rehearsal, then more time and other resources will be expended.
- **Operations security (OPSEC) considerations.** The main question the Commander must consider is “How easily can the adversary gather intelligence from the rehearsal?” The more participants, the more of an OPSEC risk the rehearsal becomes.
- **Area/space availability.** In some cases, especially for Full Force rehearsals, obtaining the area/terrain that is similar to the objective area may be difficult.
- **Objectives of the rehearsal.** What is to be accomplished? The Commander must determine the extent of the objectives (or tasks) to be accomplished in the rehearsal. Some tasks require that a specific type or technique be employed to accomplish certain tasks.

INTENTIONALLY BLANK

APPENDIX J: COMMAND RELATIONSHIPS³⁸

Levels of Authority. The specific command relationship (combatant command (command authority) (COCOM), operational control (OPCON), tactical control (TACON), and support) will define the level of authority a commander (CDR) has over assigned or attached forces. A CDR can also have authority when coordinating authority, administrative control (ADCON), and direct liaison authorized (DIRLAUTH) relationships have been specified. An overview of command relationships is shown in Figure J-1.



Figure J-1. Command Relationships

All forces under the jurisdiction of the Secretaries of the Military Departments (except those forces necessary to carry out the functions of the Military Departments) are assigned to combatant commands or commander (CDR), U.S. Element North American Aerospace Defense Command (NORAD) (USELEMNORAD) by the Secretary of Defense (SecDef) in the “Forces for Unified Commands” memorandum. A force assigned or attached to a combatant command may be transferred from that command to another combatant commander (CCDR) only when directed by the SecDef and under procedures prescribed by

³⁸ Extracted from JP 1 and FM 3-31.

the SecDef and approved by the President. The command relationship the gaining CDR will exercise (and the losing CDR will relinquish) will be specified by the SecDef. Establishing authorities for subordinate unified commands and joint task forces (JTFs) may direct the assignment or attachment of their forces to those subordinate commands and delegate the command relationship as appropriate (see Figure J-2).

COMMAND RELATIONSHIPS OVERVIEW

- Forces, not command relationships, are transferred between commands. When forces are transferred, the command relationship the gaining commander will exercise (and the losing commander will relinquish) over those forces must be specified.
- When transfer of forces to a joint force will be permanent (or for an unknown but long period of time) the forces should be reassigned. Combatant commanders will exercise combatant command (command authority) and subordinate joint force commanders (JFCs), normally through the Service component commander, will exercise operational control (OPCON) over reassigned forces.
- When transfer of forces to a joint force will be temporary, the forces will be attached to the gaining command and JFCs, normally through the Service component commander, will exercise OPCON over the attached forces.
- Establishing authorities for subordinate unified commands and joint task forces direct the assignment or attachment of their forces to those subordinate commands as appropriate.

Figure J-2. Command Relationships Overview

a. The CCDR exercises **combatant command (command authority) (COCOM)** over forces assigned or reassigned by the President or SecDef. Forces are assigned or reassigned when the transfer of forces will be permanent or for an unknown period of time, or when the broadest level of command and control (C2) is required or desired. Operational control (OPCON) of assigned forces is inherent in COCOM and may be delegated within the combatant command by the CCDR. Subordinate joint force commanders (JFCs) will exercise OPCON over assigned or reassigned forces.

b. The CCDR normally exercises operational control (OPCON) over forces attached by the SecDef. Forces are attached when the transfer of forces will be temporary. Establishing authorities for subordinate unified commands and joint task forces (JTFs) normally will direct the delegation of OPCON over forces attached to those subordinate commands.

c. In accordance with the “Forces for Unified Commands” memorandum and the Unified Command Plan (UCP), except as otherwise directed by the President or the SecDef, all forces

operating within the geographic area assigned to a specific CCDR shall be assigned or attached to, and under the command of, that CCDR. Transient forces do not come under the chain of command of the area CDR solely by their movement across operational area boundaries, except when the CCDR is exercising tactical control (TACON) for the purpose of force protection. Unless otherwise specified by the SecDef, and with the exception of the United States Northern Command (USNORTHCOM) area of responsibility (AOR), a CCDR has TACON for exercise purposes whenever forces not assigned to that CCDR undertake exercises in that CCDR's AOR.

Brief Summary of U.S. Command Relationships

COMBATANT COMMAND (COMMAND AUTHORITY)

COCOM is the authority of a combatant commander to perform those functions of command over assigned forces to include:

- Organizing and employing commands and forces.
- Assigning tasks.
- Designating objectives.
- Giving authoritative direction over all aspects of military operations, joint training
- Logistics.

COCOM should be exercised through the commanders of subordinate organizations. Normally, this authority is exercised through subordinate JFCs and Service and/or functional component commanders; however, it cannot be delegated to subordinate commanders. COCOM provides full authority to organize and employ commands and forces as the combatant commander considers necessary to accomplish assigned missions.

OPERATIONAL CONTROL

OPCON is the command authority exercised by commanders at any echelon at or below the level of COCOM and can be delegated or transferred.

OPCON is inherent in COCOM and is the authority to perform those functions of command over subordinate forces involving:

- Organizing and employing commands and forces.
- Assigning tasks.
- Designating objectives.
- Giving authoritative direction necessary to accomplish the mission.

OPCON includes authoritative direction over all aspects of military operations and joint training necessary to accomplish missions assigned to the command. It should be exercised through the commanders of subordinate organizations; normally, this authority

is exercised through subordinate JFCs and Service and/or functional component commanders. OPCON normally provides full authority to organize commands and forces and employ those forces necessary to accomplish assigned missions. It does not include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training. The combatant commander delegates these elements. OPCON does include the authority to delineate functional responsibilities and geographic JOAs of subordinate JFCs.

The superior commander gives commanders of subordinate commands and JTFs OPCON of assigned or attached forces.

TACTICAL CONTROL

TACON is the command authority over assigned or attached forces or commands, or military capability or forces made available for tasking. It is limited to the detailed and usually local direction and control of movements or maneuvers necessary to accomplish assigned missions or tasks.

TACON may be delegated to and exercised by commanders at any echelon at or below the level of COCOM. TACON is inherent in OPCON.

SUPPORT

Support is a command authority. A support relationship is established by a superior commander between subordinate commanders when one organization should aid, protect, complement, or sustain another force.

Support may be exercised by commanders at any echelon at or below the level of COCOM. This includes the President / SecDef designating a support relationship between combatant commanders as well as within a COCOM. The designation of supporting relationships is important as it conveys priorities to commanders and staffs who are planning or executing joint operations. The support command relationship is a flexible arrangement. The establishing authority is responsible for ensuring that both the supported and supporting commanders understand the degree of authority granted the supported commander.

The supported commander should ensure that the supporting commander understands the assistance required. The supporting commander provides the assistance needed, subject to the supporting commander's existing capabilities and other assigned tasks. When the supporting commander cannot fulfill the needs of the supported commander, the establishing authority is notified by either the supported or supporting commander. The establishing authority is responsible for determining a solution.

An establishing directive is normally issued to specify the purpose of the support relationship, the effect desired, and the action to be taken.

DIRECT LIAISON AUTHORIZED

Direct liaison authorized (DIRLAUTH) is that authority granted by a commander (any level) to a subordinate to directly consult or coordinate an action with a command or agency within or outside of the granting command. DIRLAUTH is more applicable to planning than operations and always carries with it the requirement of keeping the commander granting DIRLAUTH informed. DIRLAUTH is a coordination relationship, not an authority through which command may be exercised.

FUNCTIONAL COMPONENT SUPPORT RELATIONSHIPS

The Joint Force Land Component Commander (JFLCC) can be in either a supporting or supported relationship or both. The JFC's needs for unity of command and unity of effort dictate these relationships. Support relationships will be established by the JFC in appropriate campaign plans and orders. Similar relationships can be established among all functional and Service component commanders, such as the coordination of deep operations involving the JFLCC and the joint force air component commander (JFACC). Close coordination is necessary when the JFLCC provides joint suppression of adversary air defenses in support of JFACC operations. Examples are attack helicopters or multiple-launched rocket systems in Operation DESERT STORM as well as seizing and holding ports and airbases for friendly air and sea forces (such as in Operation JUST CAUSE). The JFLCC can also expect support to include airlift, close air support (CAS), and interdiction strikes from the JFACC.

The JFC may task the JFLCC to conduct operations outside of the land AO. Land-based elements may conduct air and missile defense operations to protect the force and critical assets from air and missile attack and surveillance. These may include operational maneuver and/or operational fires against adversary ports and airbases outside of the land area of operations (AO). Similarly, the JFLCC can request from the JFACC air support from other components to attack or isolate adversary land forces in the land AO. Figure J-3 illustrates a simultaneous support relationship scenario between the JFLCC and JFACC.

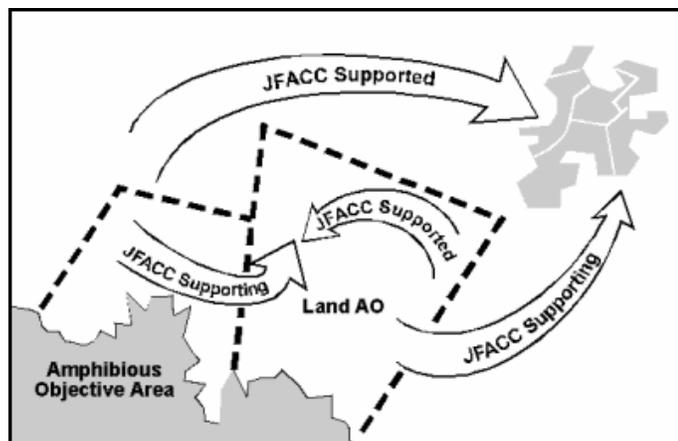


Figure J-3. JFLCC and JFACC Support Relationships

COMMAND RELATIONSHIPS WITH SERVICE COMPONENTS

The JFLC command functional component responsibility is normally assigned to a commander already serving as a Service component (e.g., ARFOR, MARFOR) to a JTF or subordinate unified command. Additionally, the JFC may use one of his Service components (e.g., Army Service component or Marine Service component) as the JFLCC reporting to him directly. The JFLCC retains Service component responsibility for assigned or attached forces but does not assume Service component responsibility for forces made available by other Service components. TACON is the normal relationship with these Service forces. In those cases in which the JFLC command is not formed from a Service component headquarters, the JFLCC has no Service component responsibilities. (See Figure J-4.)

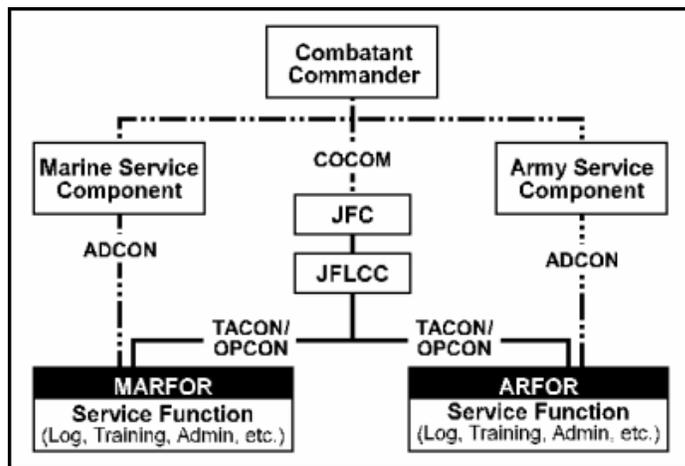


Figure J-4. Service Functions

Once the JFLC command is established, the operational requirements of the JFLCC subordinate commands are prioritized and presented to the joint force headquarters by the JFLCC. However, Service component commanders remain responsible for their military department Title 10 responsibilities, such as logistics and personnel support.

Detailed Description of Command Relationships

1. COCOM is the command authority over assigned forces vested only in the commanders of combatant commands by Title 10, United States Code (USC), Section 164 (or as directed by the President in the Unified Command Plan [UCP]) and cannot be delegated or transferred.

a. **Basic Authority.** COCOM is the authority of a CDR to perform those functions of command over assigned forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations, joint training, and logistics necessary to accomplish the missions assigned to the command. COCOM should be exercised through the CDRs of subordinate organizations. Normally, this authority is exercised through subordinate joint force

commanders (JFCs) and Service and/or functional combatant commanders (FCCs) functional component commander. COCOM provides full authority to organize and employ commands and forces as the CCDR considers necessary to accomplish assigned missions.

b. Unless otherwise directed by the President or the SecDef, the authority, direction, and control of the CCDR with respect to the command of forces assigned to that command includes the following.

- (1) Exercise or delegate operational control (OPCON), tactical control (TACON), and establish support relationships among subordinate CDRs over assigned or attached forces, and designate coordinating authorities, as described in subparagraphs (8), (9), and (10) below.
- (2) Exercise directive authority for logistic matters (or delegate directive authority for a common support capability).
- (3) Prescribe the chain of command to the commands and forces within the command.
- (4) Employ forces within that command as necessary to carry out missions assigned to the command.
- (5) Assign command functions to subordinate CDRs.
- (6) Coordinate and approve those aspects of administration and support, and discipline necessary to carry out missions assigned to the command.
- (7) Give authoritative direction to subordinate commands and forces necessary to carry out missions assigned to the command, including authoritative direction over all aspects of military operations, joint training, and logistics.
- (8) Coordinate with other CCDRs, United States Government (USG) agencies, and organizations of other countries regarding matters that cross the boundaries of geographic areas specified in the Unified Command Plan (UCP) and inform USG agencies or organizations of other countries in the AOR, as necessary, to prevent both duplication of effort and lack of adequate control of operations in the delineated areas.
- (9) Unless otherwise directed by the SecDef, function as the U.S. military single point of contact and exercise directive authority over all elements of the command in relationships with other combatant commands, DOD elements, U.S. diplomatic missions, other U.S. agencies, and organizations of other countries in the AOR. Whenever a CCDR conducts exercises, operations, or other activities with the military forces of nations in another CCDR's AOR, those exercises, operations, and activities and their attendant command relationships will be mutually agreed to between the CCDRs.
- (10) Determine those matters relating to the exercise of COCOM in which subordinates must communicate with agencies external to the combatant command through the CCDR.
- (11) Establish personnel policies to ensure proper and uniform standards of military conduct.
- (12) Submit recommendations through the CJCS to the SecDef concerning the content of guidance affecting the strategy and/or fielding of joint forces.
- (13) Participate in the Planning, Programming, Budgeting, and Execution process.

- (14) Participate in the Joint Strategic Planning System and the Joint Operation Planning and Execution System (JOPES).
- (15) Concur in the assignment (or recommendation for assignment) of officers as commanders directly subordinate to the CCDR and to positions on the combatant command staff. Suspend from duty and recommend reassignment, when appropriate, of any subordinate officer assigned to the combatant command.
- (16) Convene general courts-martial in accordance with the Uniform Code of Military Justice (UCMJ).
- (17) In accordance with laws and national and DOD policies, establish plans, policies, programs, priorities, and overall requirements for the command and control (C2), communications system, and intelligence, surveillance, and reconnaissance (ISR) activities of the command.

d. Directive Authority for Logistics. CCDRs exercise directive authority for logistics and may delegate directive authority for a common support capability. The CCDR may delegate directive authority for as many common support capabilities to a subordinate JFC as required to accomplish the subordinate JFC's assigned mission. For some commodities or support services common to two or more Services, one Service may be given responsibility for management based on Department of Defense (DOD) executive agent (EA) designations or inter-Service support agreements. However, the CCDR must formally delineate this delegated directive authority by function and scope to the subordinate JFC or Service component commander. The exercise of directive authority for logistics by a CCDR includes the authority to issue directives to subordinate CDRs, including peacetime measures necessary to ensure the following: effective execution of approved OPLANs; effectiveness and economy of operation; and prevention or elimination of unnecessary duplication of facilities and overlapping of functions among the Service component commands. CCDRs will coordinate with appropriate Services before exercising directive authority for logistics or delegate authority for subordinate CDRs to exercise common support capabilities to one of their components.

- (1) A CCDR's directive authority does not:
 - (a) Discontinue Service responsibility for logistic support;
 - (b) Discourage coordination by consultation and agreement; or
 - (c) Disrupt effective procedures or efficient use of facilities or organizations.
- (2) Unless otherwise directed by the SecDef, the Military Departments and Services continue to have responsibility for the logistic support of their forces assigned or attached to joint commands, subject to the following guidance.
 - (a) Under peacetime conditions, the scope of the logistic authority exercised by the commander of a combatant command will be consistent with the peacetime limitations imposed by legislation, DOD policy or regulations, budgetary considerations, local conditions, and other specific conditions prescribed by the SecDef or the CJCS. Where these factors preclude execution of a CCDR's directive by component CDRs, the comments and recommendations of the CCDR, together with the comments of the component CDR concerned, normally will be referred to the appropriate Military Department for consideration. If the matter is not resolved in a timely manner with the

appropriate Military Department, it will be referred by the CCDR, through the CJCS, to the SecDef.

- (b) Under crisis action, wartime conditions, or where critical situations make diversion of the normal logistic process necessary, the logistic authority of CCDRs enables them to use all facilities and supplies of all forces assigned to their commands as necessary for the accomplishment of their missions. The President or SecDef may extend this authority to attached forces when transferring those forces for a specific mission and should specify this authority in the establishing directive or order. Joint logistic doctrine and policy developed by the CJCS establishes wartime logistic support guidance to assist the CCDR in conducting successful joint operations.

2. Operational control (OPCON) is the command authority that may be exercised by CDRs at any echelon at or below the level of combatant command and may be delegated within the command. When forces are transferred between combatant commands, the command relationship the gaining CDR will exercise (and the losing CDR will relinquish) over these forces must be specified by the SecDef.

a. Basic Authority. Operational control (OPCON) is inherent in COCOM and is the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. OPCON includes authoritative direction over all aspects of military operations and joint training necessary to accomplish missions assigned to the command. It should be exercised through the CDRs of subordinate organizations; normally, this authority is exercised through subordinate joint force commanders (JFCs) and Service and/or functional combatant commanders or functional component commanders. OPCON normally provides full authority to organize commands and forces and employ those forces as the commander considers necessary to accomplish assigned missions. It does not include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training. These elements of COCOM must be specifically delegated by the CCDR. OPCON does include the authority to delineate functional responsibilities and operational areas of subordinate JFCs.

b. CDRs of subordinate commands, including JTFs, normally will be given OPCON of assigned or attached forces by the superior CDR.

c. OPCON conveys the authority for the following.

- (1) Exercise or delegate OPCON and tactical control (TACON), establish support relationships among subordinates, and designate coordinating authorities.
- (2) Give direction to subordinate commands and forces necessary to carry out missions assigned to the command, including authoritative direction over all aspects of military operations and joint training.
- (3) Prescribe the chain of command to the commands and forces within the command.
- (4) Organize subordinate commands and forces within the command as necessary to carry out missions assigned to the command.
- (5) Employ forces within the command, as necessary, to carry out missions assigned to the command.

- (6) Assign command functions to subordinate CDRs.
- (7) Plan for, deploy, direct, control, and coordinate the actions of subordinate forces.
- (8) Establish plans, policies, priorities, and overall requirements for the intelligence, surveillance, and reconnaissance (ISR) activities of the command.
- (9) Conduct joint training and joint training exercises required to achieve effective employment of the forces of the command, in accordance with joint doctrine established by the CJCS, and establish training policies for joint operations required to accomplish the mission. This authority also applies to forces attached for purposes of joint exercises and training.
- (10) Suspend from duty and recommend reassignment of any officer assigned to the command.
- (11) Assign responsibilities to subordinate CDRs for certain routine operational matters that require coordination of effort of two or more CDRs.
- (12) Establish an adequate system of control for local defense and delineate such operational areas for subordinate CDRs as deemed desirable.
- (13) Delineate functional responsibilities and geographic operational areas of subordinate CDRs.

d. The SecDef may specify adjustments to accommodate authorities beyond OPCON in an establishing directive when forces are transferred between CDRs or when members and/or organizations are transferred from the Military Departments to a combatant command. Adjustments will be coordinated with the participating CDRs.

3. Tactical control (TACON) is the command authority over assigned or attached forces or commands, or military capability or forces made available for tasking, that is limited to the detailed direction and control of movements or maneuvers within the operational area necessary to accomplish assigned missions or tasks.

a. Basic Authority. TACON is inherent in OPCON and may be delegated to and exercised by CDRs at any echelon at or below the level of combatant command. When forces are transferred between CDRs, the command relationship the gaining CDR will exercise (and the losing CDR will relinquish) over those forces must be specified by the SecDef.

b. TACON provides the authority to:

- (1) Give direction for military operations; and
- (2) Control designated forces (e.g., ground forces, aircraft sorties, missile launches, or satellite payload management).

c. TACON provides sufficient authority for controlling and directing the application of force or tactical use of combat support assets within the assigned mission or task. TACON does not provide organizational authority or authoritative direction for administrative and logistic support; the CDR of the parent unit continues to exercise these authorities unless otherwise specified in the establishing directive.

d. Functional component CDRs typically exercise TACON over military capability or forces made available to the functional component for tasking.

4. Support is a command authority. A support relationship is established by a superior CDR between subordinate CDRs when one organization should aid, protect, complement, or sustain another force.

a. Basic Authority. Support may be exercised by CDRs at any echelon at or below the combatant command level. This includes the SecDef designating a support relationship between CDRs as well as within a combatant command. The designation of supporting relationships is important as it conveys priorities to CDRs and staffs that are planning or executing joint operations. The support command relationship is, by design, a somewhat vague but very flexible arrangement. The establishing authority (the common superior CDR) is responsible for ensuring that both the supported CDR and supporting CDRs understand the degree of authority that the supported CDR is granted.

b. The supported CDR should ensure that the supporting CDRs understand the assistance required. The supporting CDRs will then provide the assistance needed, subject to a supporting CDR's existing capabilities and other assigned tasks. When a supporting CDR cannot fulfill the needs of the supported CDR, the establishing authority will be notified by either the supported CDR or a supporting CDR. The establishing authority is responsible for determining a solution.

c. An establishing directive normally is issued to specify the purpose of the support relationship, the effect desired, and the scope of the action to be taken. It also should include:

- (1) The forces and resources allocated to the supporting effort;
- (2) The time, place, level, and duration of the supporting effort;
- (3) The relative priority of the supporting effort;
- (4) The authority, if any, of the supporting CDR to modify the supporting effort in the event of exceptional opportunity or an emergency; and
- (5) The degree of authority granted to the supported CDR over the supporting effort.

d. Unless limited by the establishing directive, the supported CDR will have the authority to exercise general direction of the supporting effort. General direction includes the designation and prioritization of targets or objectives, timing and duration of the supporting action, and other instructions necessary for coordination and efficiency.

e. The supporting CDR determines the forces, tactics, methods, procedures, and communications to be employed in providing this support. The supporting CDR will advise and coordinate with the supported CDR on matters concerning the employment and limitations (e.g., logistics) of such support, assist in planning for the integration of such support into the supported CDR's effort as a whole, and ensure that support requirements are appropriately communicated within the supporting CDR's organization.

f. The supporting CDR has the responsibility to ascertain the needs of the supported force and take action to fulfill them within existing capabilities, consistent with priorities and requirements of other assigned tasks.

g. Several categories of support have been defined to better characterize the support that should be given. For example, land forces that provide fires normally are tasked in a direct support role.

h. There are four defined categories of support that a CDR may direct over assigned or attached forces to ensure the appropriate level of support is provided to accomplish mission objectives. These include general support, mutual support, direct support, and close support. Figure J-5 summarizes each of the categories of support. The establishing directive will specify the type and extent of support the specified forces are to provide.

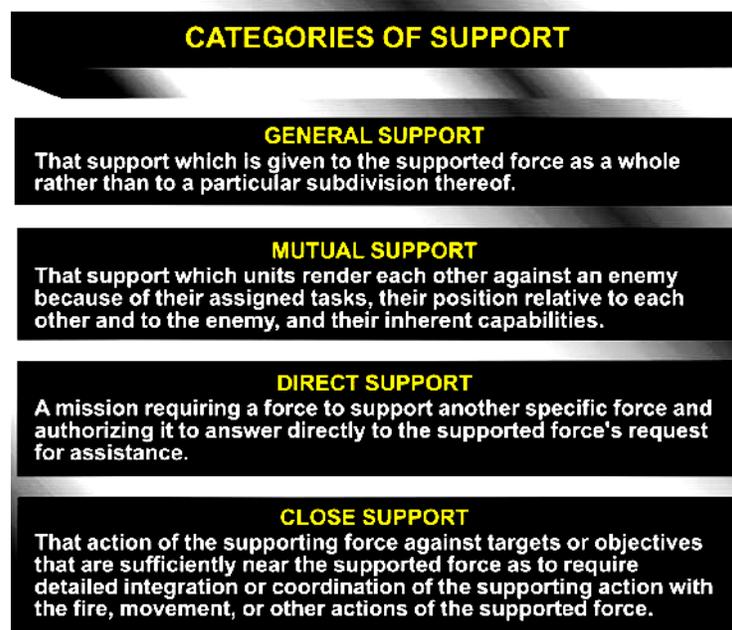


Figure J-5. Categories of Support

Support Relationships Between Combatant Commands

a. The SecDef establishes support relationships between the CCDRs for the planning and execution of joint operations. This ensures that the tasked CCDR(s) receives the necessary support. A supported CCDR requests capabilities, tasks supporting DOD components, coordinates with the appropriate Federal agencies (where agreements have been established), and develops a plan to achieve the common goal. As part of the team effort, supporting CCDRs provide the requested capabilities, as available, to assist the supported CCDR to accomplish missions requiring additional resources.

b. The CJCS organizes the joint planning and execution community for joint operation planning to carry out support relationships between the combatant commands. The supported CCDR has primary responsibility for all aspects of an assigned task. Supporting CCDRs provide forces, assistance, or other resources to a supported CCDR. Supporting CCDRs prepare supporting plans as required. Under some circumstances, a CCDR may be a supporting CCDR for one operation while being a supported CCDR for another.

Support Relationships Between Component Commands

a. The joint force commander (JFC) may establish support relationships between component CDRs to facilitate operations. Support relationships afford an effective means to prioritize and ensure unity of effort for various operations. Component CDRs should establish liaison with other component CDRs to facilitate the support relationship and to coordinate the planning and execution of pertinent operations. Support relationships may change across phases of an operation as directed by the establishing authority.

b. When the commander of a Service component is designated as a functional combatant commander (FCC) functional component commander, the associated Service component

responsibilities for assigned or attached forces are retained, but are not applicable to forces made available by other Service components. The operational requirements of the functional component CDR's subordinate forces are prioritized and presented to the joint force commander (JFC) by the functional component CDR, relieving the affected Service component CDRs of this responsibility, but the affected Service component CDRs are not relieved of their administrative and support responsibilities.

c. In rare situations, a supporting component CDR may be supporting two or more supported CDRs. In these situations, there must be clear understanding among all parties, and a specification in the establishing directive, as to who supports whom, when, and with what prioritization. When there is a conflict over prioritization between component CDRs, the CDR having COCOM of the component CDRs will have final adjudication.

5. Other authorities outside the command relationships delineated above are described below.

a. **Administrative Control.** Administrative control (ADCON) is the direction or exercise of authority over subordinate or other organizations with respect to administration and support, including organization of Service forces, control of resources and equipment, personnel management, logistics, individual and unit training, readiness, mobilization, demobilization, discipline, and other matters not included in the operational missions of the subordinate or other organizations. ADCON is synonymous with administration and support responsibilities identified in Title 10, United States Code (USC). This is the authority necessary to fulfill Military Department statutory responsibilities for administration and support. ADCON may be delegated to and exercised by CDRs of Service forces assigned to a CDR at any echelon at or below the level of Service component command. ADCON is subject to the command authority of CDRs. ADCON may be delegated to and exercised by CDRs of Service commands assigned within Service authorities. Service CDRs exercising ADCON will not usurp the authorities assigned by a CDR having COCOM over CDRs of assigned Service forces.

b. **Coordinating Authority.** CDRs or individuals may exercise coordinating authority at any echelon at or below the level of combatant command. Coordinating authority is the authority delegated to a CDR or individual for coordinating specific functions and activities involving forces of two or more Military Departments, two or more joint force components, or two or more forces of the same Service (e.g., joint security coordinator exercises coordinating authority for joint security area operations among the component CDRs). Coordinating authority may be granted and modified through a memorandum of agreement to provide unity of command and unity of effort for operations involving, Reserve Component (RC), and Active Component (AC) forces engaged in interagency activities. The CDR or individual has the authority to require consultation between the agencies involved but does not have the authority to compel agreement. The common task to be coordinated will be specified in the establishing directive without disturbing the normal organizational relationships in other matters. Coordinating authority is a consultation relationship between CDRs, not an authority by which command may be exercised. It is more applicable to planning and similar activities than to operations. Coordinating authority is not in any way tied to force assignment. Assignment of coordinating authority is based on the missions and capabilities of the commands or organizations involved.

c. **Direct Liaison Authorized.** Direct liaison authorized (DIRLAUTH) is that authority granted by a CDR (any level) to a subordinate to directly consult or coordinate an action with a command or agency within or outside of the granting command. DIRLAUTH is more applicable to planning than operations and always carries with it the requirement of keeping the CDR granting DIRLAUTH informed. DIRLAUTH is a coordination relationship, not an authority through which command may be exercised.

6. Command of National Guard and Reserve Units

a. All National Guard and reserve forces (except those forces specifically exempted) are assigned by the SecDef to the combatant commands under the authority provided in Title 10, United States Code (USC), Sections 162 and 167, as indicated in the “Forces for Unified Commands” memorandum. However, those forces are available for operational missions only when mobilized for specific periods in accordance with the law, or when ordered to active duty and after being validated for employment by their parent Service.

b. The authority CCDRs may exercise over assigned Reserve Component (RC) forces when not on active duty or when on active duty for training is training and readiness oversight (TRO). CCDRs normally will exercise TRO over assigned forces through the Service component commanders. TRO includes the authority to:

- (1) Provide guidance to Service component commanders on operational requirements and priorities to be addressed in Military Department training and readiness programs;
- (2) Comment on Service component program recommendations and budget requests;
- (3) Coordinate and approve participation by assigned Reserve Component (RC) forces in joint exercises and other joint training when on active duty for training or performing inactive duty for training;
- (4) Obtain and review readiness and inspection reports on assigned Reserve Component (RC) forces; and
- (5) Coordinate and review mobilization plans (including post-mobilization training activities and deployability validation procedures) developed for assigned Reserve Component (RC) forces.

c. Unless otherwise directed by the SecDef, the following applies.

- (1) Assigned Reserve Component (RC) forces on active duty (other than for training) may not be deployed until validated by the parent Service for deployment.
- (2) CCDRs may employ Reserve Component (RC) forces assigned to their subordinate component CDRs in contingency operations only when the forces have been mobilized for specific periods in accordance with the law, or when ordered to active duty and after being validated for employment by their parent Service.
- (3) Reserve Component (RC) forces on active duty for training or performing inactive-duty training may be employed in connection with contingency operations only as provided by law, and when the primary purpose is for training consistent with their mission or specialty.

d. CCDRs will communicate with assigned Reserve Component (RC) forces through the Military Departments when the RC forces are not on active duty or when on active duty for training.

e. CCDRs may inspect assigned Reserve Component (RC) forces in accordance with Department of Defense directive (DODD) 5106.4, *Combatant Command Inspectors General*, when such forces are mobilized or ordered to active duty (other than for training).

7. U.S. vs. Alliance Command Relationships

Figure J-6 offers a comparison between U.S. command relationships and the two alliance command relationships of NATO and CFC/USFK.

Authority	Least control						
	US COCOM	US OPCON	NATO OPCOM	NATO OPCON	CFC/USFK COMBINED OPCON	NATO TACOM	US & NATO TACON
Direct authority to deal with DOD, US diplomatic missions, agencies	X						
Coordinate CINC boundary	X						
Granted to a command	X		X				
Delegated to a command		X		X	X	X	X
Set chain of command to forces	X	X					
Assign mission/designate objective	X	X	X				
Assign tasks	X	X	X			X	
Direct/employ forces	X	X	X	X	X		
Establish maneuver control measures	X	X	X	X	X	X	X
Reassign forces	X						
Retain OPCON	X	X	X				
Delegate OPCON	X	X	X	X with approval			
Assign TACOM	X	X					
Delegate TACON	X	X	X	X	X		
Retain TACON	X	X	X	X			
Deploy forces (information/within theater)	X	X	X	X			
Local direction/control designated forces	X	X					X
Assign separate employment of unit components	X	X	X				
Directive authority for logistics	X						
Direct joint training	X	X					
Exercise command of US forces in MNF	X	X					
Assign/reassign subordinate commanders/officers	X	May suspend or recommend reassignment					
Conduct internal discipline/training	X						

NATO Full Command and CFC/USFK Command less OPCON are basically equivalent to US COCOM, but only for internal matters

X – has this authority
 – denied this authority, or not specifically granted it

LEGEND
COCOM – Combatant command
OPCON – Operational control
OPCOM – Operational command
TACOM – Tactical command
TACON – Tactical control

Figure J-6 U.S. vs. Alliance Command Relationships

APPENDIX K: Global Force Management (GFM)

The *Global Force Management Implementation Guidance* (GFMIG) is a critical source document for force planning and execution. This SecDef approved document establishes guidance for assignment, apportionment, and allocation of forces in support of Global Force Management (GFM) framework (see Figure K-1).⁴¹

The three processes of assignment, allocation, and apportionment are related to each other. Figure 18 shows the entire DoD force pool (every military unit, Soldier, Sailor, Airman, and Marine) within the Institutional Service Forces and Operational Forces box (grey). This force pool is further divided by assigned forces (“Forces For”) to a CCDR and “unassigned” forces (dashed black line). Most allocated forces come from the operational forces, but in some instances, the Service may be directed to provide (allocate) forces from their Institutional

- **The Global Force Management Implementation Guidance (GFMIG) integrates force assignment, apportionment, and allocation processes in support of the National Defense Strategy and joint force requirements**
 - SecDef **Assigns** forces to CCDRs to meet UCP missions and responsibilities
 - SecDef **Allocates** forces to meet current operational requirements
 - CJCS **Apportions** forces to CCDRs for planning

- **GFMIG: JS prepares, SecDef approves**
 - Section I: GFM Overview (J8)
 - Section II: Assignment of Forces (“Forces For”) (J-8)
 - Section III: Allocation of Forces (J3)
 - Section IV: Apportionment of Forces (J8)(CJCS approves)
 - Published in even years
 - Last published for FY 2010

- **The Forces For Unified Commands Memorandum (Forces For)**
 - Assignment and Apportionment Tables only
 - Published in odd years
 - Last published in for FY2011 (pending SecDef signature)

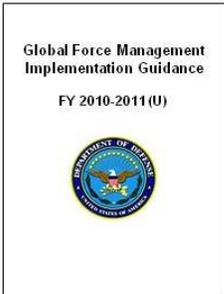


Figure K-1. Global Force Management Implementation Guidance (GFMIG).

Forces (such as recruiters and schoolhouses). Unassigned and assigned forces may also be used by the Service to meet Service institutional requirements. This is the reason the Projected Employed Forces (the lower box) crosses the dashed line and into the Institutional Service Forces box. The CCDR to which forces are assigned often employs and deploys their assigned forces. Since the CCDR already has Combatant Command Authority (COCOM), and OPCON is inherent in COCOM, the forces do not need to be allocated. Apportioned forces are calculated by subtracting global demand from the assigned forces, and the fact that

⁴¹ As a point of clarification, for force allocation the GFMIG only provides guidelines and processes. Actual allocation occurs via the SecDef using the process as described in Figure K-3.

some assigned forces are employed performing Service institutional missions or are performing missions for their assigned CCDR, the employed and apportioned forces in Figure K-2 overlap. CCDR force requests are constantly changing to respond to world events. To determine the Projected Employed Forces, analysis of the current CCDR force requests must be conducted in order to project the number of Employed Forces in order to calculate the number of forces left that can reasonably be expected to be available, or apportioned.⁴²

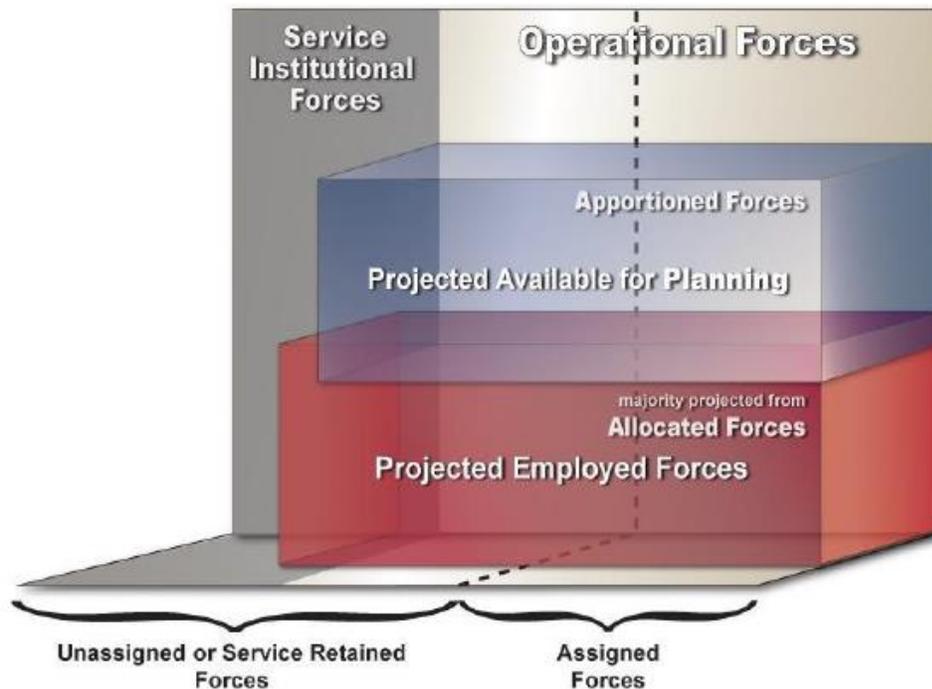


Figure K-2. Force Structure (Force Pool).

The Global Force Management Board (GFMB) is chaired by the Joint Director of the Joint Staff (DJS) and is comprised of representatives from OSD, the Joint Staff, Services, combatant commands, and DoD Agencies. The GFMB assesses and prioritizes CCMD requests for annual capabilities, provides a prioritized list of CCMD requests to the **Joint Force Coordinator (JFC)** and **Joint Force Providers (JFP)** to use in identifying joint solutions for military capabilities among the Services, and frames any contentious issues for decision by the SecDef.⁴³

Until its disestablishment, U.S. Joint Forces Command (USJFCOM) served as the JFP for conventional forces. The responsibility for providing sourcing recommendations

⁴² This description and diagram of the force pool came from JP 5-0 Joint Operation Planning, pp. H-4 and H-5 and the publication "Planning for Planner's Handbook," p. 95.

⁴³ GFM is a Department of Defense process to align force apportionment, assignment, and allocation methodologies to support joint force availability requirements, enable comprehensive insight into global availability of U.S. military forces, and provide senior decision makers a vehicle to quickly and accurately assess the impact and risk of proposed allocation, assignment, and apportionment changes.

conventional forces has now shifted to the Joint Staff J31 as the Conventional Joint Force Coordinator. Forces previously assigned to USJFCOM are now Service Retained. U.S. Special Operations Command (USSOCOM) serves as the Special Operations Forces JFP and the U.S. Transportation Command (USTRANSCOM) serves as the mobility JFP.

U.S. Strategic Command (USSTRATCOM) serves as the Joint Force Manager (JFM) for ISR and Missile Defense. The JFM develops recommend sourcing solutions collaboratively with the JFC and JFPs for Missile Defense ISR capabilities and associated processing, exploitation, and dissemination (PED) capabilities. The JFC and JFPs, working through their assigned Service components, provide global sourcing recommendations validated force and JIA requirements.

This force allocation process⁴⁴ provides senior military and civilian leadership the information needed to make informed risk-based decisions to balance operational commanders' competing requirements. The GFM allocation process (see Figure 19 for a graphic depiction of the process) facilitates alignment of forces and individuals against known requirements in advance of planning and deployment preparation timelines. Planning and allocation process are integrated and iterative. There are two GFM allocation processes based upon urgency of the request:

- a. **Annual**—CCDR force and Joint Individual Augmentation (JIA) requirements for the FY.
- b. **Emergent**—CCDR emerging or crisis-based force, JIA and exercise requirements.

Force Allocation Process

Using the numbering in Figure K-3 as a guide, the force allocation process is as follows:

- 1, 2.** Combatant commanders submit a Request for Force or capability (RFF/C) to support annual or emerging operational requirements to the SecDef via the Joint Staff.
- 3 & 4.** The Joint Staff validates the request and assigns the request to a JFC and /or JFP to determine a recommended sourcing solution.
- 5 & 6.** The JFC/JFP develop sourcing recommendations in coordination with the Services via their assigned global-looking Service Components. The recommendations will include any associated risks and other information considered germane to the sourcing recommendation. The recommendation must confirm to existing OSD policy, any deviations must be accompanied with a detailed explanation for SECDEF approval.⁴⁵

⁴⁴ There are several tools that are used to support this process. Among them are: **Joint Capabilities Requirements Manager (JCRM)** – a secure tool that the CCDRs use to document force requirements to the Joint Staff for validation, prioritizing, and assignment to the JFC/JFP. It also allows the JFC/JFPs, Services, and JFP assigned Service Components to provide sourcing recommendations. The **electronic Joint Manpower and Personnel System (eJMPS)**—Captures JIA demand. **Joint Training Information Management Systems (JTIMS)**—Captures exercise demand.

⁴⁵ Each Service maintains **Service Red Lines** and Service Polices that govern how forces will deploy. The SECDEF may order the Services to exceed these polices.

7. The Joint Staff receives the JFC/JFP sourcing recommendations and staffs the DRAFT DEPORD with agencies and OSD. Combatant commanders and Service chiefs may communicate to the CJCS their assessment of risk or other issues associated with the JFC/JFP's recommended global sourcing solution. The Joint Staff coordinates w/ OSD, agencies, Services, or combatant commands with issues or equity to either articulate or adjudicate (if possible) issues that would result in a non-concurrence or reclama.⁴⁶ The Joint Staff will, as required, convene an off-cycle GFMB, or Operations Deputies Tank or JCS Tank to address and attempt resolution of contentious issues.

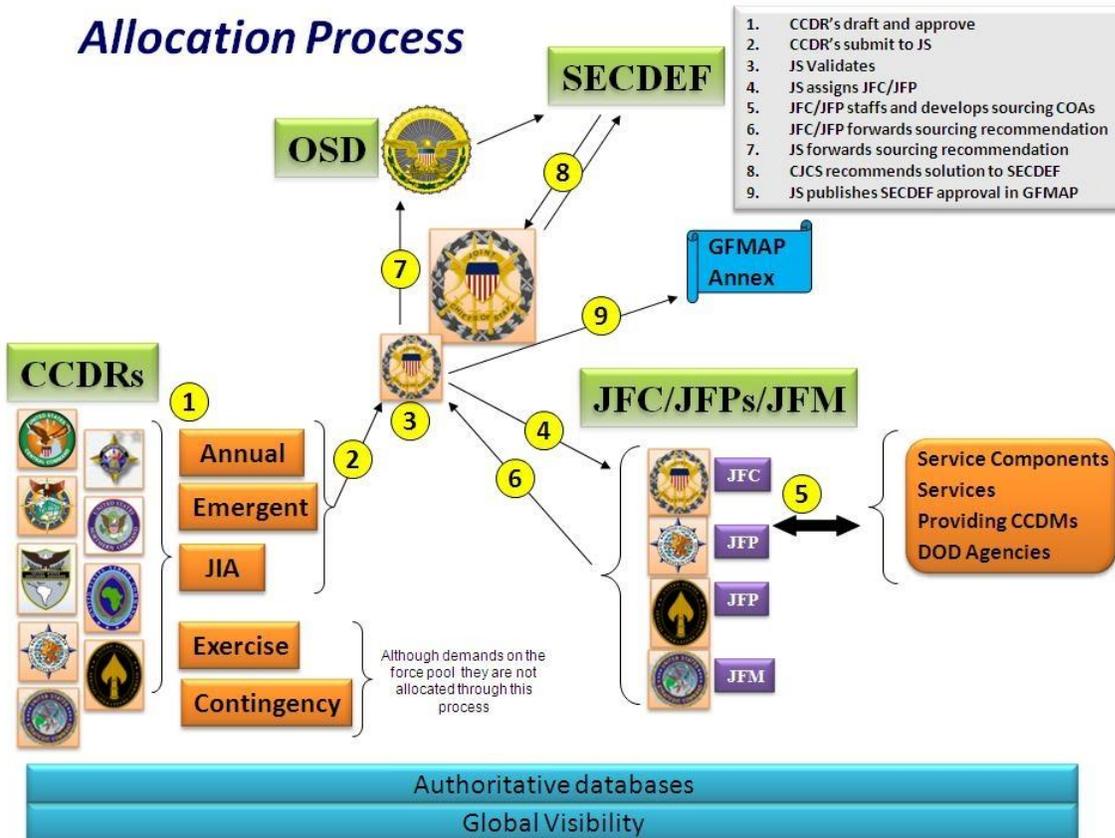


Figure K-3. Force Allocation Process.

8. The Joint Staff forwards the recommended sourcing solution with the non-concurrence, if not adjudicated in the GFMB, to the SecDef for approval.

9. Upon SecDef approval, the DEPORD is forwarded for force flow execution in the **Global Force Management Allocation Plan (GFMAP)**. The GFMAP is a consolidated

⁴⁶ This action *does not* relieve the JFC/JFP of the requirement to coordinate its recommended sourcing solution with combatant commands and Services. Instead, it provides a means as required for combatant commanders and Service chiefs to provide an additional assessment if they feel one is required.

order that allows all SECDEF allocation decisions be compiled into one order. Supporting and Supported CCDRs publish Deployment Orders (DEPODs) implementing the orders in the GFMAP.

APPENDIX L: Operational Time Definitions

Times. (DOD) (C, D, and M-days end at 2400 hours Universal Time (Zulu time) and are assumed to be 24 hours long for planning.) The Chairman of the Joint Chiefs of Staff normally coordinates the proposed date with the commanders of the appropriate unified and specified commands, as well as any recommended changes to C-day. L-hour will be established per plan, crisis, or theater of operations and will apply to both air and surface movements. Normally, L-hour will be established to allow C-day to be a 24-hour day.

a. C-day. The unnamed day on which a deployment operation commences or is to commence. The deployment may be movement of troops, cargo, weapon systems, or a combination of these elements using any or all types of transport. The letter “C” will be the only one used to denote the above. The highest command or headquarters responsible for coordinating the planning will specify the exact meaning of C-day within the aforementioned definition. The command or headquarters directly responsible for the execution of the operation, if other than the one coordinating the planning, will do so in light of the meaning specified by the highest command or headquarters coordinating the planning.

b. D-day. The unnamed day on which a particular operation commences or is to commence.

c. F-day. For contingency planning, day on which FDO force deployment begins.

d. F-hour. The effective time of announcement by the Secretary of Defense to the Military Departments of a decision to mobilize Reserve units.

e. H-hour. The specific hour on D-day at which a particular operation commences.

f. I-day. The day on which the Intelligence Community determines that within a potential crisis situation, a development occurs that may signal a heightened threat to U.S. interests. Although the scope and direction of the threat is ambiguous, the Intelligence Community responds by focusing collection and other resources to monitor and report on the situation as it evolves.

g. L-hour. The specific hour on C-day at which a deployment operation commences or is to commence.

h. M-day. The term used to designate the unnamed day on which full mobilization commences or is due to commence.

i. N-day. The unnamed day an active duty unit is notified for deployment or redeployment.

j. R-day. Redeployment day. The day on which redeployment of major combat, combat support, and combat service support forces begins in an operation.

k. S-day. The day the President authorizes Selective Reserve callup (not more than 200,000).

l. T-day. The effective day coincident with Presidential declaration of National Emergency and authorization of partial mobilization (not more than 1,000,000 personnel exclusive of the 200,000 callup).

m. W-day. Declared by the National Command Authorities, W-day is associated with an adversary decision to prepare for war (unambiguous strategic warning).

APPENDIX M: Classes of Supply

SUPPLY	CLASS
Subsistence	I
Clothing, individual equipment, tentage, organizational tool sets and tool kits, hand tools, maps, and administrative and housekeeping supplies and equipment	II
POL (package and bulk): petroleum fuels; lubricants; hydraulic and insulating oils; preservatives; liquid and compressed gasses; bulk chemical products; coolants; deicing and antifreeze compounds, together with components and additives of such products; and coal	III
Construction materials, including installed equipment and all fortification and barrier materials	IV
Ammunition of all types, chemical and special weapons, bombs explosives, mines, fuses, detonators, pyrotechnics, missiles, rockets, propellants, and other associated items	V
Personal demand items (nonmilitary sales items)	VI
Major end items: a final combination of end products that are ready for their intended use, for example, tanks, launchers, mobile machine shops, and vehicles	VII
Medical material, including medical-peculiar repair parts	VIII
Repair parts (less medical-peculiar repair parts): all repair parts and components, to include kits, assemblies, and subassemblies – repairable and nonrepairable – required for maintenance support of all equipment	IX
Material to support nonmilitary programs, such as agricultural economic development, not included in classes I through IX	X

INTENTIONALLY BLANK

APPENDIX N: Operational Assessments

1. INTRODUCTION

Assessment occurs at all levels of war and command, strategic, operational, and tactical. Although focused at the operational level of war, the guidance in this appendix is also applicable to the high tactical level. Task group commanders will find the framework defined in this appendix helpful when developing supporting tactical assessments. Understanding not only how the subordinate plan impacts the operational plan, but also how the task group task assessment impacts the operational level assessment will aid in a complete nesting of actions and ultimately a higher level of situational awareness across all echelons.

All planning processes require forethought concerning the assessment that will take place during execution of the plan. Operational assessment is a critical part of execution, contributing to the commander's understanding of progress toward his objectives. The effectiveness of assessment is directly related to how well assessment is integrated into the planning process. Planners, however, should not be so focused on assessment that they devise courses of action (COAs) based on the ability or ease of assessing them. For this reason, the guidance provided throughout this document presents assessment planning as parallel to and integrated with the JOPP.

Continual development and refinement of the assessment framework should be conducted during every step of the JOPP. Members of the cross-functional assessment group or cell in a Joint Force Headquarters, ensure the assessment plan fully supports the commander's vision of the overall plan. This facilitates the development of meaningful and pertinent assessment measures. The intricacies of plan development that never surface in the proposed COA or final order are crucial to development of an assessment plan. It is essential that the assessment group provide representation in the planning team so they can ensure that the resulting assessment plan is relevant to the operation and associated plan.

If the commander directs the planning team to use design methodologies in support of the JOPP (see Appendix D), it is important for the assessment group to be involved in this early stage of planning to ensure effective nesting of the assessment plan with the commander's early visualization of the operation.

Lesson Learned

Assessment within the HQ is a staff-wide responsibility, not simply that of the assessment group. Consider assigning staff ownership for the various aspects or lines of operation/lines of efforts that are closely associated with specific staff responsibilities, enabling more comprehensive and qualitative input into the process. This decentralization of assessment activities requires designation of one assessment lead to coordinate assessment actions across the staff.

1.1 Purpose

This appendix is not intended to serve as a detailed examination of assessment processes and procedures. Rather, it provides a basic discussion of operational assessment and definitions. Although portions of this appendix provide detailed step-by-step discussions, it is understood that some planning efforts, especially those in a time constrained case, will be stressed to follow such a regimented format. In these cases, the principles of the steps should be used in whatever process is

developed to create the assessment portion of the operational plan.

This appendix also offers templates and examples that can assist in developing an operational assessment plan and assessment tools.

2. OPERATIONAL ASSESSMENT AND THE JOPP

Throughout this publication, various planning requirements have been identified for accomplishment within certain steps of the JOPP. Operational assessment planning, however, is not strictly assigned to specific JOPP steps. The planning attributes of operational assessment span development over many steps of the JOPP. The nature of the mission and staff organization may necessitate addressing various operational assessment attributes at different times than notionally prescribed. It is understood that these processes can be tailored to meet planning variables.

During the JOPP, planners create a concept of operations to achieve various objectives. As planners develop the operational concept, an assessment concept is developed for application during execution. Specifically, assessment informs decision making by determining the level of success with respect to various planned actions of the operation. Operational assessment can evaluate progress along lines of operation (LOOs) and/or lines of effort (LOEs) toward the objective(s). It can measure the impact of designated specified events or the achievement of desired conditions within a phase to aid in phase transition decisions. Tactical assessment measures the progress of specific tasks or tactical actions assigned to subordinate commands.

It is important to remember that the commander will form his personal judgments, in part, as a result of staff input and their assessments, discussions with subordinate commanders, and interaction with others.

3. FUNCTIONS OF OPERATIONAL ASSESSMENT

Operational assessment serves three basic functions (See Figure N-1).

1. Assessment addresses the need to determine the current state of operations, which requires data collection. This data can be quantitative or qualitative, but must focus on pertinent attributes that reflect the degree of accomplishment of the operational plan's objectives. This provides a snapshot of the current situation to be used as a baseline for comparison with the past and future operational situation. This current status is the "What happened?" of operational assessment.

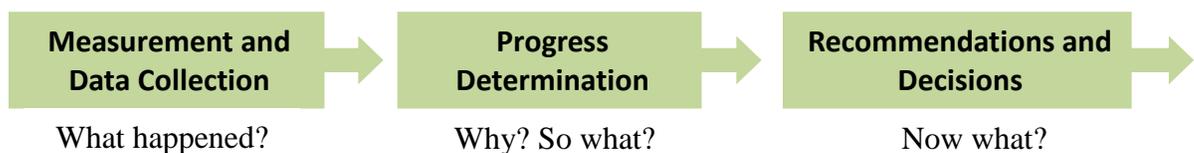


Figure N-1. Three Functions of Operational Assessment

2. The current operational situation alone provides no meaningful information without analysis as to what the data mean. Trends, unplanned or unanticipated effects, and impacts of enemy action are identified by this analysis. When compared to history and established baselines, the comparison provides indications of whether or not the actions directed by the plan have affected the operational environment in a manner consistent with the commander's intent. When compared to the desired military end state, this shows progress toward achieving

certain milestones or advantages at decisive points that better inform the commander's decision making. This analysis provides the "Why? So what?" of operational assessment.

3. The most important function of operational assessment is to determine the necessity, or lack thereof, to change or adjust the current plan. Negative trends or stalling progress as measured by assessment must be addressed. Here is where the assessment group answers the questions, "Are we doing the right things" and "Are we doing things right?" Are subordinates executing actions correctly to produce intended impacts to plan outcomes (task assessment)? If so, are the tasks performed creating the desired conditions in accordance with the plan (effect assessment)? If progress is not being realized, is it a result of poor subordinate execution (task accomplishment) or poor plan development (effect assessment)? The assessment group alone can only give indication of progress. The assessment group, planning team, and current operations personnel work together to develop recommendations for branch plans or other modifications to the plan. These recommendations are the "Now what?" portion of operational assessment.

Understanding these assessment functions assists in developing an operational plan that is supported by sound, rational assessment processes.

4. PLANNING AND ASSESSMENT INTEGRATION

The characteristics of the operating environment define the conditions in which forces operate. These are also attributes of the environment that, from an operational standpoint, forces may desire to change to facilitate progress toward a more desirable condition. Examples of desirable conditions may be civil order, maritime governance, or a positive state of humanitarian assistance; a deficiency in any of these may be a *condition* in which change is desired.

End states and objectives are the foundation for plan development. The activities conducted within an operational plan follow a systematic approach of accomplishing objectives to achieve an overall *end state*. Tasks are performed to create effects. Successful creation of these effects contributes to achieving *objectives* and ultimately realizing end states along a line of effort or line of operation. *Effects* are a means to assess progress toward the setting of conditions that inform accomplishment of an objective. The execution of this chain impacts the overall state of the operating environment. Following are key definitions:

end state — The set of required conditions that defines achievement of the commander's objectives. (JP 3-0)

objective — 1. The clearly defined, decisive, and attainable goal toward which every operation is directed. 2. The specific target of the action taken which is essential to the commander's plan. (JP 5-0)

condition — 1. Those variables of an operational environment or situation in which a unit, system, or individual is expected to operate and may affect performance. 2. A physical or behavioral state of a system that is required for the achievement of an objective. (JP 3-0).

effect — 1. The physical or behavioral state of a system that results from an action, a set of actions, or another effect. 2. The result, outcome, or consequence of an action. 3. A change to a condition, behavior, or degree of freedom. (JP 3-0)

task— An action or activity (derived from an analysis of the mission and concept of operations) assigned to an individual or organization to provide a capability.

Figure N-2 provides a visual depiction of the linkage between tasks, tactical objectives, effects, objectives, and end states.

Tasks can occur at all levels of warfare: tactical, operational, and strategic. A defining attribute of a task is that it is a focused effort designed to achieve an explicit purpose. Specifically, it is an action that is directed and/or taken by a force or organization. Such actions are intended to achieve a purpose that results in effect(s) that lead to the accomplishment of an objective. Recognizing resulting effects or the identification of a change in the present condition of the environment to the desired condition is a means to assess the success of the task and/or objective's accomplishment.



Figure N-2. Linkage of Task-Effect-Objective-End State

(Photos by: U.S. Navy, NOAA, USMC, U.S. Army)

A desired effect is a condition that is created that supports an associated objective, while an undesired effect is a condition that, when recognized, inhibits progress toward an objective. Effects are **heavily influenced by the adversary and are often much less tangible than tasks.**

Planning teams must realize that developing effects is an important step in marrying tasks to objectives and integration of the assessment with planning. Planning teams develop effects with four primary considerations in mind:

1. Each desired effect should link directly to one or more objectives;
2. The effect should be measurable;
3. The effect should not specify the ways and means for accomplishment;
4. The effect should be distinguishable from the objective it supports as a condition for success, not as another objective or a task.

5. THE SCOPE OF TASKS AND ASSESSMENT WITHIN THE PLAN

Given HHQ end states and objectives, deriving maritime objectives and tasks poses challenges in the context of assessment. Specifically, the assessment of those objectives and tasks should be relevant to the commander with respect to informed decision-making. Using *meaningful* and *timely* assessment criteria that are tied to decision points or phase transitions not only offer the commander assessment tools that can assist in directing future operations, but are the most challenging in terms of assessment planning for the assessment group to develop.

An example of this may be a decision point of sending forces ashore to secure a port in a hostile environment. Assessment of conditions that are only geared to campaign-level end states may not have sufficient fidelity to support the commander’s decision to send forces ashore. Assessment of objectives or tasks that deal with establishing local maritime superiority and suppressing enemy maritime defenses may be appropriate in this case. Figure N-3 demonstrates how an adequately scoped assessment process feeds into the commander’s need for decision support.

Lesson Learned

Ensure the assessment plan supports the commander’s CCIRs. Loss of this linkage can result in a staff’s failure to support the commander’s critical decisions. Crosswalk the assessment plan to decision support products to increase the fidelity of information that affects decision-making.

6. MEASURES AND INDICATORS

Defining tasks and purposes is a critical part of the JOPP. Just as important for assessment is the development of those measures to be used to help identify trends and success in performing tasks or creating effects. The two most important measures are *measures of effectiveness* and *measures of performance*.

measure of effectiveness (MOE) — A criterion used to assess changes in system behavior, capability, or operational environment that is tied to measuring the attainment of an end state, achievement of an objective, or creation of an effect. (JP 3-0)

measure of performance (MOP) — A criterion used to assess friendly actions that is tied to measuring task accomplishment. (JP 3-0)

A task is performed to achieve a purpose that results in effect(s), but MOPs are not used to assess the creation of those effects. MOPs measure the organization’s actions against an assigned task, while MOEs assess the success of the task in creating an effect in order to achieve objectives (see Figure N-3). As a caution to planners, the plan should take into account uncertainty with respect to cause and effect. MOPs and MOEs should be developed with specific tasks in mind. Although there is a link between a task and the effect it is developed to create, the corresponding measures should be treated separately. This assists in determining if successful task completion (MOP “doing things

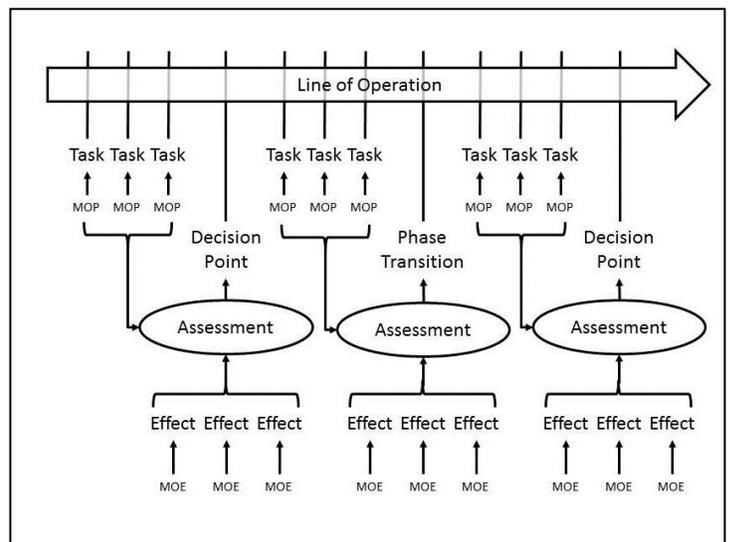


Figure N-3. Assessment supporting Commander’s Decisions

right”) is the true cause for the creation of a desired effect (MOE “doing the right things”).

Determining MOPs and the success and/or completion of assigned tasks within a phase is a relatively simple proposition, given subordinate tasks and purposes directed in the order. Developing MOEs requires significantly more intuition, creativity and experience. MOEs are intended to measure a change in a condition. For this reason, they can be prefaced with verbiage that recognizes trend changes, as in “increase/decrease.” An example of an MOE is “Increase/decrease in host-nation capability to provide maritime governance and enforcement.” Although a desired effect may be relatively similar to a desired effect in another mission, the environment and adversary provide for variables that may require different MOEs. When developing MOEs, the following questions may assist the planning team:

- Is this task’s purpose phase-specific?
- Is a particular decision linked to the task’s purpose?
- What is the behavior being influenced?
- What kinds of activities show trends that measure progress towards creating the desired effect?
- What activities inhibit creating the condition?

Once planners have developed MOEs, the assessment group/cell must craft the MOE’s associated indicators; these are termed *measure of effectiveness indicators*.

Measure of effectiveness indicator (MOEI) – Information requirements (IR) (usually tasked to internal staff or subordinate commands), that when compiled together, provide evidence of or gives grounds to a MOE. MOEIs make it possible to assess trends of individual MOEs. Indicators are what can be observed. (TACMEMO 3-32.2-09)

As the term implies, MOEIs provide the assessment team with observable indicators in the form of data linked to the assessment of a specific MOE.

6.1 MOE and MOE-I Development

The following sections provide example procedures for development of MOEs, MOE-Is, and associated indicator thresholds. These procedures are comprehensive and may be viewed as too cumbersome for some planning efforts, hence, they can be tailored to the particular plan. The rationale of each step should be understood and applied to some level of rigor. Specifically, the procedures address rank ordering and fully exploring the need for MOE-Is as they relate to a particular. If the particular process of these steps is not followed, the intent remains valid: to minimize the number of indicators while maintaining adequate coverage to determine the status of a desired effect.

MOPs are normally developed by the tasked unit or resource. Developing MOEs and their associated indicators and assessment criteria is typically the responsibility of the assessment group supported by other staff elements. The intent in developing MOEs and their associated indicators is to build an accurate baseline model for determining whether friendly actions are progressing toward or away from the desired objectives. As operational-level objectives are seldom attained or exhibited instantaneously, MOEs provide a framework for conducting trend analysis over time, based on the observation of specific, discrete indicators.

Below is a general outline for MOE and MOE-I development.

Step 1: Analyze the objective/task. Prior to developing MOEs, the assessment team analyzes the objective/task to ensure there is a common understanding of the desired/undesired behavior or capability the objective/task describes, and how the desired/undesired behavior or capability would likely be exhibited by the specific target system, particularly if the objective/task is phase-specific. A common understanding of intent is critical to ensuring that the associated MOEs reflect activities that, when analyzed, will accurately depict objective/task status during plan development or OPORD execution.

Step 2: Brainstorm MOEs. When a common understanding of the objective/task intent is gained, MOE development begins. “Brainstorming” is one method which may be used. In this step, the assessment team focuses on identifying types of activity that could potentially provide information that would be useful in assessing the status of the objective/task. During this step, suggestions are not reviewed for quality and all suggestions are considered. Common syntax, such as “increase/decrease in [activity],” should be used with each activity where possible.

Step 3: Evaluate MOEs. Each potential MOE is individually evaluated for grammar, clarity, relation to the objective/task, and suitability (e.g., for phase-specific objective/task, ensure the activity identified by the MOEs likely to be conducted during the phase in question.). During this step, some MOEs may be reclassified as potential indicators or combined with other suggested MOEs. MOEs deemed unsuitable are re-worded or discarded. The refined MOEs are then evaluated as a group against the effect. The assessment team must reach consensus that, given the information available for each of the refined MOEs, the refined MOEs as a group would allow for an accurate assessment of the objective/task. If the MOEs are deemed inadequate, additional MOEs must be developed, or the conditions related to the objective/task must be refined or discarded.

Step 4: Develop MOE Indicators. In this step, indicators are developed for those MOEs refined in Step 3. Considering each MOE individually, the assessment team identifies specific discrete indicators that would allow an assessment as to the level of activity described by the MOE under consideration (e.g., indicators for an MOE of “increase/decrease in out-of-cycle military activity” may include “aircraft sortie rates,” “force deployment status,” etc.). Indicators must be measurable (at least potentially, subject to confirmation by collection analysts), directly related to the activity identified by the MOE, and appropriate, given knowledge of the target system. Additionally, indicators must provide data that would indicate a change in MOE in sufficient time for the assessment to be of use to the commander. At the operational level, some conditions related to an objective/task may be created only over a lengthy period of time, and changes in data for the most reliable associated indicators may only be measured sporadically or very gradually. In these cases, consideration should be given to developing or identifying additional indicators that, while perhaps less reliable, may show more timely short-term changes.

Step 5: Evaluate the MOE Indicators. Following indicator development, indicators are evaluated as a group. The assessment team must reach consensus that the indicators as a group would allow for an accurate assessment of the MOE. If the indicators are deemed inadequate, additional indicators must be developed, or the MOE must be refined or discarded.

Step 6: Rank MOEs. The next step is to rank the MOEs for the effect under consideration. Preferably, MOEs for a given objective/task are gauged against a common set of independent criteria, and then ranked based upon the results (commonly used criteria include observable, timely, and level of direct relationship to the effect).

Step 7: Reverse-Order Review. Having ranked the MOEs, the final step in developing MOEs is to conduct a reverse-order review to ensure that only those MOEs that are actually required (with an acceptable level of risk) to assess the objective/task are utilized, both to streamline the process and to conserve assessment/monitoring resources. In this step, the lowest ranking MOE is temporarily

discarded and the assessment team then evaluates the remaining MOEs against the objective/task. If the assessment team reaches consensus that the remaining MOEs would still allow for an accurate assessment of the objective/task and that use of the remaining MOEs alone would not present an unacceptable level of risk of misperception of the objective/task, the lowest ranked MOE is discarded. This process is repeated with each remaining MOE until the assessment team determines that only remaining MOEs are required.

Step 8: Weight the MOEs. The MOEs require weighting criteria. MOEs are weighed against each other based on their relative importance in assessing the associated objective/task. The assignment of weight may be based on a subjective analysis of the selected MOE (i.e., a given MOE is considered to be of greater significance than another), or it may be based on a more precise knowledge of the system being assessed. In the absence of either a subjective or objective basis to apply weighting criteria, all MOEs for a given objective/task may be weighted equally.

A graphic showing the assessment framework is seen in figure N-4.

6.2 MOE-I Thresholds

The development of criteria during planning is important because it establishes a consistent baseline for assessment trend analysis and reduces subjectivity on the part of units or agencies that report on designated indicators. The establishment of assessment thresholds is particularly important when a change in assessment status for an objective/task or MOE is tied to a specific decision point, such as phase transition. Planners must ensure that assessment thresholds support the commander's intent and that assessment criteria will result in information being provided to the commander with sufficient fidelity to allow for an informed decision.

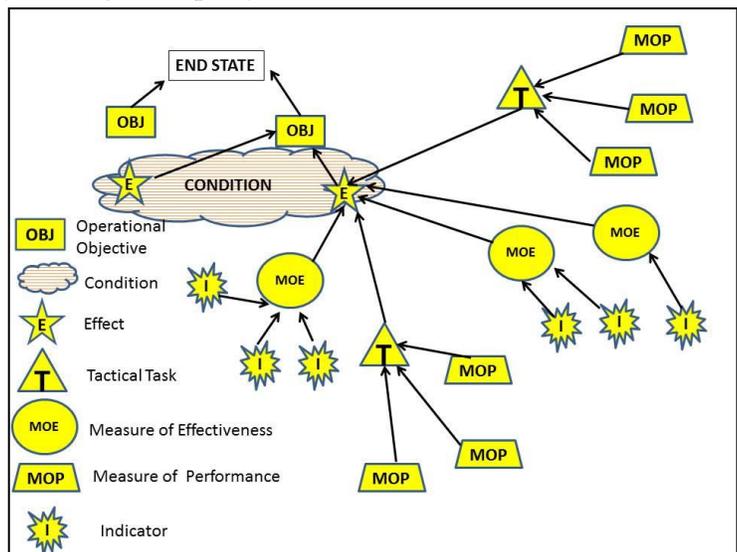


Figure N-4 Assessment Framework

Development of MOE indicator criteria requires significant input from intelligence analysts, subject matter experts (SMEs), operation planners, and collection managers. Because the development of indicator criteria can be time-consuming, this should begin early in the planning process. The indicator criteria development process is conducted for each MOE.

Step 1: Review Indicators. The initial step in the threshold development process is to ensure that the MOE under consideration clearly identifies the activity that is being measured. When a common understanding of the MOE is gained, the indicators can be better developed to support the MOE. They are reviewed individually to ensure that they are measurable and are directly related to the MOE. The indicators are then reexamined to ensure that they are relevant, responsive, and can be efficiently measured. Indicators are not considered measurable if data will not be available at their required periodicities. They should also collectively provide sufficient coverage of the MOE under consideration. If the indicators are inadequate to determine MOE status, additional indicators must be developed, or the MOE must be refined or discarded.

Step 2: Determine Reporting Thresholds Having refined the indicators, each indicator is examined individually to establish the type of data to be reported and the thresholds for indicator data reports. Data types typically fall into one of three categories:

1. Quantitative data (e.g., “average daily hours of electricity” or “number of aircraft sorties per day”);
2. Event-based data (specific occurrence of an event, e.g., “establishment of diplomatic relations” or “participation in negotiations”);
3. Qualitative data (e.g., “low/medium/high level of available health care” or “low/medium/high level of military exercise activity”).

Following establishment of a data type for an indicator, establish reporting thresholds against the range of data expected during execution, to establish initial reporting criteria. For quantitative data reports, thresholds are usually assigned based on a deviation from an historic baseline that constitutes a “normal” or “acceptable” condition or state. For instance, in the example regarding the average daily hours of electricity, a GREEN threshold could be established as equaling 16 hours a day of electricity or greater. AMBER could be established as 8 to 15 hours of electricity per day, while a RED threshold could be established as any amount less than 8 hours a day. Exact thresholds may be based on historic norms, or on information of “acceptability” based on cultural systems analysis.

Where baseline information is unavailable, the assessment team should forgo the assignment of thresholds for that indicator pending further research by intelligence personnel or SMEs. For qualitative data types, particular care should be taken to ensure that sufficient definition is given to threshold criteria to allow for consistency between reports over time. As an example, defining thresholds for an indicator of “availability of health care”, or “military exercise activity” as “LOW/MEDIUM/HIGH” with no amplifying guidance may introduce excessive subjectivity into the reporting process and result in the same data being reported as LOW and MEDIUM on successive reports. Measures related to tasks in the UJTL can be an invaluable reference for this sort of information.

Step 3: Rank the Indicators. Following the designation of data types and thresholds, rank the indicators. Preferably, indicators are evaluated against a common set of independent criteria, and then ranked based upon the results of that evaluation. These criteria are relevance (to the MOE, effect, or objective), measurability, responsiveness, and ability to be measured.

Step 4: Review in Reverse Order. Having ranked the indicators, conduct a reverse order review to ensure that only those indicators that are actually required (with an acceptable level of risk) to assess the MOE are tasked for collection. Proceed as with the reverse-order MOE review.

Step 5: Weight the Indicators. In preparation for populating the assessment model and data management tool to be used during assessment execution, the assessment team weights the indicators against each other based on their relative importance in assessing MOE thresholds. The process is the same as in Para. G.6.1 Step 8.

Step 6: Repeat the Process for the Remaining MOEs. The indicator criteria development process is conducted for each MOE individually; as the process is completed for one MOE, it is repeated for the rest.

Step 7: Pass the Results to the Collection Manager. Upon completion of MOE/indicator planning, indicators developed by the assessment team are provided to a collection manager who includes the indicators in the collection plan and assigns appropriate collection assets against them.

Step 8: Populate the Assessment Model. Some commands have successfully employed spreadsheets formatted with embedded macros as a means to store assessment parameters and capture assessment-

related data. Others have used software applications to facilitate assessment planning and implementation. Regardless of the mechanism, the assessment model should be completed and populated prior to the start of operations.

Although the above procedures include a methodology to inhibit the unnecessary and unproductive development of excessive MOEs and associated indicators, there is a tendency toward MOE and indicator proliferation. Should a large number of MOEs and indicators become a part of the assessment plan, data collection and effective data analysis will be challenged, causing a loss of focus on the mission and objectives. Further, these excess MOEs and indicators could potentially overburden subordinates tasked with reporting requested data. Assessment groups must manage the number of effects, MOEs, and indicators being measured, selecting only those necessary to support the commander’s decisions and not to some preconceived formula of “more is better.”

7. EXAMPLES OF THE NEED FOR ASSESSMENT

There is a significant difference between recognizing the potential benefits of assessment and designing and implementing a practical means of realizing those benefits, within time constraints, staff resources, and information available. The examples below show that, however important assessment is viewed, it may fall short on measuring meaningful results.

7.1 Haiti Earthquake

Following the 7.0 magnitude earthquake in Haiti on 12 January 2010, many agencies installed a large number of bladder tanks at internally displaced persons sites and by March 70 percent of water at the various camps was being supplied by tanker trucks. This could have been viewed as a significant improvement in combatting the water shortage. However, a subsequent survey established that communities were hesitant about drinking trucked water, largely because people had become used to purchasing water as a consequence of a successful pre-earthquake government campaign to improve safe water awareness. The survey revealed that people were continuing to buy water in small plastic bags or from water kiosks, as they had done prior to the earthquake. While agencies had initially hoped that providing treated water by tanker would have a significant health impact, the majority of people used it only for washing and cooking, and did not drink it.

Similarly, coalition forces providing potable water focused on the delivery of bottled water through logistics chains. The overall success was measured in water delivered to depot-level posts throughout Haiti. Due to a lack of controlled distribution of this water, the water was often pilfered or found its way into the hands of black marketers who sold it for exorbitantly high prices. The ultimate outcome of this was the failure to create a condition where potable water was available to the end user.

This example shows how activity can be mistaken for progress. Specifically, MOPs designed to measure task accomplishment, in this case delivery of water, were accurately assessed as being

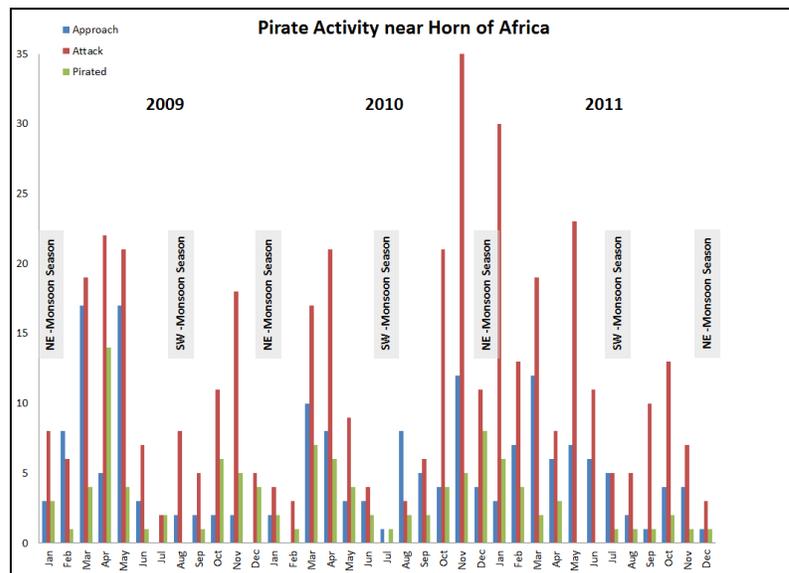


Figure N-5. Pirate Activity near Horn of Africa

completed. However, a lack of MOEs and MOEIs that assessed the desired condition contributed to late recognition that progress towards the objective of relieving human suffering was lacking. An MOE such as “increase/decrease the population access to basic needs” may have provided resolution to the overall success of relieving human suffering. Such an MOE may have generated an MOEI “Reported cases of dehydration” and ultimately provided a more timely indication of stalled progress.

7.2 Horn of Africa Counter-piracy

Coalition forces engaged in neutralizing piracy near the Horn of Africa devised a robust assessment plan. It addressed funding, mother ships, maritime impressions, and others. In the winter of 2008 it appeared that the efforts were paying off as the level of pirate activity appeared to diminish. In retrospect, however, key indicators identifying the capacity of the pirates to operate had not been affected. In reality, as the winter season approached, the occurrence of monsoons increased. For this reason alone, piracy decreased. Figure N-5 shows a retrospective look at piracy events in the Horn of Africa.

8. TEMPLATES

8.1 Planning Standard Operating Procedures (SOP)

Below is an excerpt from a sample planning SOP. It shows a methodology to ensure assessment is integrated at the first step of the planning process.

EXAMPLE

INCORPORATION OF OPERATIONAL ANALYSIS INTO THE MISSION ANALYSIS PROCESS.

During mission analysis the planning team first determines the objectives (and/or tasks and purposes) of the operation which are derived from HHQ guidance and end state.

The assessment cell identifies the conditions necessary for the accomplishment of the objectives, tasks. These conditions can then be further described as specific effects which describe the conditions that need to be established or avoided within the operational environment to achieve the objective. When effects statements are developed, the text should conform to the following criteria in order to impart the commander’s explicit intent and to clearly distinguish effects from objectives and/or tasks:

- Describe the behavior of a single system or systems: Desired or undesired.
- Support one or more objectives: Aligns to strategic or operational ends.
- Do not suggest ways or means: No hint of friendly capabilities, tasks or actions.
- Do not infer causality: The nexus between action and effect.

Objectives	Desired Effects
1. Efforts to access region and injured personnel is supported	1.1 SPODs/LOCs are open and secure 1.2 Isolated areas are reachable 1.3 JFMCC forces granted adequate overflight
2. Efforts to provide essential services and shelter are supported	2.1 Affected population has adequate food/water 2.2 Affected population has adequate clothing and shelter 2.3 Affected population health needs are being serviced
3. DoS-designated personnel evacuated to safe haven	3.1 All AMCITs desiring evacuation are identified and evacuated. 3.2 Adequate C2 established with DoS 3.3 Evacuees receive proper care and comfort while under JFMCC control
4. NEO is viewed as a non-threatening safety and security operation	4.1 NEO activities not perceived as interfering with internal nation’s political landscape 4.2 Friendly and neutral stakeholders perceive evacuation operations favorably 4.3 NEO activities are not perceived as preparation for expanding the conflict.

Figure N-6. Linkage of Objectives to Effects

- Use active voice: Subject (noun), verb (active), object (noun) – Who, what, etc.
- May include a timeframe: Window or no-later-than time/date.
- Is measurable: Ability to observe changes in behavior or system attributes.

Once effects are developed they are vetted by the assessment cell to validate their feasibility and measurability. A sample objectives and effects presentation is depicted in Figure N-7.

8.2 Assessment Annex to Appendix C

The method of communicating the assessment framework to the staff, HHQ, other components and subordinates may vary. One proposed method is to include an annex to Appendix C of the base OPOD. Below is an outline of such an appendix. It may also include the assessment organization, offices of primary responsibility (OPRs), and concept for assessment. This example includes objectives, effects, MOEs, MOE-Is, and collection responsibilities.

EXAMPLE

Objectives / Effects

Objective 1: Maritime safety and security in the JOA

Effect 1.1: Regional threats do not impede freedom of navigation (FON) in the JOA

MOE 1.1.1: Increase/decrease in regional threat maritime presence

MOEI 1.1.1.1: Number of hostile ships preparing to get under way

OPR: NIOC

MOEI 1.1.1.2: Number of hostile ships under way

OPR: NIOC

MOE 1.1.2: Increase/decrease in engagements with hostile ships

MOEI 1.1.2.1: Number of engagements where hostile ships close to X NM of coalition ships.

OPR: CTF XXX

MOEI 1.1.2.2: Number of engagements where hostile aircraft close to X NM of coalition ships.

OPR: CTF XXX

MOEI 1.1.2.3: Number of CDCM radars active with coalition ships within X NM.

OPR: CTF XXX

Lesson Learned

There is a need to balance quantitative and qualitative approaches in assessment to reduce the likelihood of skewed conclusions and over engineered assessment plans. Staffs should strive to avoid committing valuable time and energy to excessive and time-consuming assessment schemes and quantitative collection efforts that may squander valuable resources of the HQ and subordinate commands at the expense of the commander's and staff's own experience, intuition, and observations in developing a commander-centric, qualitative assessment.

APPENDIX O: Glossary

Adaptive Planning and Execution system (APEX). A Department of Defense system of joint policies, processes, procedures, and reporting structures, supported by communications and information technology, that is used by the joint planning and execution community to monitor, plan, and execute mobilization, deployment, employment, sustainment, redeployment, and demobilization activities associated with joint operations. (JP 5-0)

adversary. A party acknowledged as potentially hostile to a friendly party and against which the use of force may be envisaged. (JP 3-0)

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 2-01.3)

air component coordination element (ACCE). An Air Force component element that interfaces and provides liaison with the joint Force land component commander, or commander Army Forces. The air component coordination element is the senior Air Force element assisting the joint Force land component commander, or commander Army Forces in planning air component supporting and supported requirements. (JP 3-30)

air interdiction. Air operations conducted to divert, disrupt, delay, or destroy the enemy's military surface capabilities before it can be brought to bear effectively against friendly forces, or to otherwise achieve objectives that are conducted at such distances from friendly forces that detailed integration of each Air mission with the fire and movement of friendly forces is not required. (JP 1-02)

air tasking order (ATO). A method used to task and disseminate to components, subordinate units, and command and control agencies projected sorties, capabilities and/or forces to targets and specific missions. Normally provides specific instructions to include call signs, targets, controlling agencies, etc., as well as general instructions. Also called ATO. (JP 1-02)

aerial port of debarkation (APOD). A station that serves as an authorized port to process and clear aircraft and other traffic for entrance to the country where located. (NTRP 1-02)

aerial port of embarkation (APOE). A station that serves as an authorized port to process and clear aircraft and other traffic for departure from the country where located. (NTRP 1-02)

alert order. 1. A crisis action planning directive from the Secretary of Defense, issued by the Chairman of the Joint Chiefs of Staff, that provides essential guidance for planning and directs the initiation of execution planning for the selected course of action authorized by the Secretary of Defense. (JP 5-0) 2. A planning directive that provides essential planning guidance, directs the initiation of execution planning after the directing authority approves a military course of action, but does not authorize execution. Also called ALERTORD. (JP 5-0)

allocation. Distribution of limited forces and resources for employment among competing requirements. (JP 5-0)

amphibious assault. The principal type of amphibious operation that involves establishing a force on a hostile or potentially hostile shore. (JP 1-02)

amphibious defense zone (ADZ). The area encompassing the amphibious objective area and the adjoining airspace required by accompanying naval forces for the purpose of air defense. (JP 1-02)

amphibious demonstration. A type of amphibious operation conducted for the purpose of deceiving the enemy by a show of force with the expectation of deluding the enemy into a course of action unfavorable to him. (JP 1-02)

amphibious objective area (AOA). A geographical area (delineated for command and control purposes in the initiating directive) within which is located the objective(s) to be secured by the amphibious force. This area must be of sufficient size to ensure accomplishment of the amphibious force's mission and must provide sufficient area for conducting necessary sea, air, and land operations. (JP 1-02)

amphibious raid. A type of amphibious operation involving swift incursion into or temporary occupation of an objective followed by a planned withdrawal. (JP 1-02)

amphibious ready group (ARG). A Navy task organization formed to conduct amphibious operations. (NTRP 2-01)

antisubmarine warfare (ASW). That segment of naval warfare that involves sensors, weapons, platforms, and targets in the subsurface environment. (NTRP 1-02)

apportionment. In the general sense, distribution of forces and capabilities as the starting point for planning, etc. (JP 5-0)

area of influence. 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. (JP 3-0)

area of interest (AOI). That area of concern to the commander, including the area of influence, areas adjacent thereto, and extending into enemy territory. This area also includes areas occupied by enemy forces who could jeopardize the accomplishment of the mission. (JP 3-0)

area of operations (AO). An operational area defined by the joint force commander for land and maritime forces that should be large enough to accomplish their missions and protect their forces. (JP 1-02)

area of responsibility (AOR). 1. The geographical area associated with a combatant command within which a geographic combatant commander has authority to plan and conduct operations. (JP 1-02)

assigned [forces]. 1. To place units or personnel in an organization where such placement is relatively permanent, and/or where such organization controls and administers the units or personnel for the primary function, or greater portion of the functions, of the unit or personnel. (JP 3-0)

assumption. A supposition on the current situation or a presupposition on the future course of events, either or both assumed to be true in the absence of positive proof, necessary to enable the commander in the process of planning to complete an estimate of the situation and make a decision on the course of action. (JP 5-0)

attach. 1. The placement of units or personnel in an organization where such placement is relatively temporary. 2. The detailing of individuals to specific functions where such functions are secondary or relatively temporary. (JP 3-0)

battle damage assessment (BDA). The estimate of damage composed of physical and functional damage assessment, as well as target system assessment, resulting from the application of lethal or nonlethal military force. (JP 1-02)

battlespace. The environment, factors, and conditions that must be understood to successfully apply combat power, protect the force, or complete the mission. This includes the air, land, sea, space, and the included enemy and friendly forces; facilities; weather; terrain; the electromagnetic spectrum; and the information environment within the operational areas, areas of interest, and areas of influence. (MCRP 5-12C)

branch. 1. A subdivision of any organization. (JP 5-0) 2. A geographically separate unit of an activity, which performs all or part of the primary functions of the parent activity on a smaller scale. (JP 5-0) 3. An arm or service of the Army. (JP 5-0) 4. The contingency options built into the base plan used for changing the mission, orientation, or direction of movement of a force to aid success of the operation based on anticipated events, opportunities, or disruptions caused by enemy actions and reactions. See sequel. (JP 5-0)

campaign. A series of related major operations aimed at achieving strategic and operational objectives within a given time and space. (JP 1-02)

campaign plan. A joint operation plan for a series of related major operations aimed at achieving strategic or operational objectives within a given time and space. (JP 5-0)

campaign planning. The process whereby combatant commanders and subordinate joint force commanders translate national or theater strategy into operational concepts through the development of an operation plan for a campaign. See also campaign; campaign plan. (JP 5-0)

center of gravity (COG). The source of power that provides moral or physical strength, freedom of action, or will to act. (JP 5-0)

close air support (CAS). Air action by fixed- and rotary-wing Aircraft against hostile targets that are in close proximity to friendly forces and that require detailed integration of each Air mission with the fire and movement of those forces. (JP 1-02)

close support. That action of the supporting force against targets or objectives which are sufficiently near the supported force as to require detailed integration or coordination of the supporting action with the fire, movement, or other actions of the supported force. (JP 3-31)

collection plan. A plan for collecting information from all available sources to meet intelligence requirements and for transforming those requirements into orders and requests to appropriate agencies. (JP 2-01)

collection planning. A continuous process that coordinates and integrates the efforts of all collection units and agencies. (JP 2-0)

collection requirement. 1. An intelligence need considered in the allocation of intelligence resources. Within the Department of Defense, these collection requirements fulfill the essential

elements of information and other intelligence needs of a commander, or an agency. (JP 2-01.2) 2. An established intelligence need, validated against the appropriate allocation of intelligence resources (as a requirement) to fulfill the essential elements of information and other intelligence needs of an intelligence consumer. (JP 2-01.2)

combat search and rescue (CSAR). The tactics, techniques, and procedures performed by forces to effect the recovery of isolated personnel during combat. (JP 3-50)

combatant command. A unified or specified command with a broad continuing mission under a single commander established and so designated by the President, through the Secretary of Defense and with the advice and assistance of the Chairman of the Joint Chiefs of Staff. Combatant commands typically have geographic or functional responsibilities. (JP 1-02)

combatant command (command authority) (COCOM). Nontransferable command authority established by Title 10 ("Armed Forces"), United States Code, Section 164, exercised only by commanders of unified or specified combatant commands unless otherwise directed by the President or the Secretary of Defense. Combatant command (command authority) cannot be delegated and is the authority of a combatant commander to perform those functions of command over assigned forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations, joint training, and logistics necessary to accomplish the missions assigned to the command. Combatant command (command authority) should be exercised through the commanders of subordinate organizations. Normally this authority is exercised through subordinate joint force commanders and Service and/or functional component commanders. Combatant command (command authority) provides full authority to organize and employ commands and forces as the combatant commander considers necessary to accomplish assigned missions. Operational control is inherent in combatant command (command authority). (JP 1-02)

combatant commander (CCDR). A commander of one of the unified or specified combatant commands established by the President. (JP 1-02)

command and control (C2). The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission. (JP 1-02)

command and control warfare (C2W). The integrated use of operations security (OPSEC), military deception, psychological operations (PSYOP), electronic warfare (EW), and physical destruction, mutually supported by intelligence, to deny information to, influence, degrade, or destroy adversary command and control capabilities, while protecting friendly command and control capabilities against such actions. Command and control warfare applies across the operational continuum and at all levels of conflict. C2W is both offensive and defensive: a. counter-C2—To prevent effective C2 of adversary forces by denying information to, influencing, degrading, or destroying the adversary C2 system. b. C2-protection—To maintain effective command and control of own forces by turning to friendly advantage or negating adversary efforts to deny information to, influence, degrade, or destroy the friendly C2 system.

command relationships. The interrelated responsibilities between commanders, as well as the operational authority exercised by commanders in the chain of command; defined further as combatant command (command authority), operational control, tactical control, or support. (JP 1-02)

commander's critical information requirement (CCIR). An information requirement identified by the commander as being critical to facilitating timely decision-making. The two key elements are friendly force information requirements and priority intelligence requirements. (JP 1-02)

commander's intent. A concise expression of the purpose of the operation and the desired end state. It may also include the commander's assessment of the adversary commander's intent and an assessment of where and how much risk is acceptable during the operation. (JP 1-02)

commander, Navy forces (COMNAVFOR). The senior Navy commander assigned to a joint task force that does not have the Navy component commander assigned to it. (NTRP 1-02)

commander's planning guidance. The commander's vision of decisive and shaping actions used to assist the planning team in determining the main effort, phases of the operation, location of critical events, and other aspects of the operation the commander deems pertinent to course of action development. (NTRP 1-02)

commander's required delivery date. The original date relative to C-day, specified by the combatant commander for arrival of forces or cargo at the destination; shown in the time-phased force and deployment data to assess the impact of later arrival. (JP 5-0) left off

common operating picture (COP). A single identical display of relevant information shared by more than one command that facilitates collaborative planning and assists all echelons to achieve situational awareness. (JP 3-0)

concept of operations (CONOPS). A verbal or graphic statement that clearly and concisely expresses what the joint force commander intends to accomplish and how it will be done using available resources. (JP 5-0)

contingency operation. A military operation that is either designated by the Secretary of Defense as a contingency operation or becomes a contingency operation as a matter of law (Title 10, United States Code, Section 101[a][13]). It is a military operation that: a. is designated by the Secretary of Defense as an operation in which members of the Armed Forces are or may become involved in military actions, operations, or hostilities against an enemy of the United States or against an opposing force; or b. is created by definition of law. Under Title 10, United States Code, Section 101 (a)(13)(B), a contingency operation exists if a military operation results in the (1) call-up to (or retention on) active duty of members of the uniformed Services under certain enumerated statutes (Title 10, United States Code, Sections 688, 12301[a], 12302, 12304, 12305, 12406, or 331-335); and (2) the call-up to (or retention on) active duty of members of the uniformed Services under other (non-enumerated) statutes during war or national emergency declared by the President or Congress. (JP 1)

constraint. In the context of joint operation planning, a requirement placed on the command by a higher command that dictates an action, thus restricting freedom of action. See restraint (JP 5-0)

contiguous zone. 1. A maritime zone adjacent to the territorial sea that may not extend beyond 24 nautical miles (nms) from the baselines from which the breadth of the territorial sea is measured. Within the contiguous zone the coastal state may exercise the control necessary to prevent and punish infringement of its customs, fiscal, immigration, or sanitary laws and regulations within its territory or territorial sea. In all other respects the contiguous zone is an area subject to high seas freedom of navigation, overflight, and related freedoms, such as the conduct of military exercises. (JP 1-02)

contingency. A situation requiring military operations in response to natural disasters, terrorists, subversives, or as otherwise directed by appropriate authority to protect US interests. (JP 1-02)

counterair. A mission that integrates offensive and defensive operations to attain and maintain a desired degree of air superiority. Counterair missions are designed to destroy or negate enemy aircraft and missiles, both before and after launch. (JP 1-02)

course of action (COA). 1. Any sequence of activities that an individual or unit may follow. (JP 5-0)
2. A scheme developed to accomplish a mission. (JP 5-0) 3. A product of the course-of-action development step of the joint operation planning process. (JP 5-0)

crisis action planning (CAP). The Adaptive Planning and Execution system process involving the time-sensitive development of joint operation plans and operation orders for the deployment, employment, and sustainment of assigned and allocated forces and resources in response to an imminent crisis. (JP 1-02)

critical capability. A means that is considered a crucial enabler for a center of gravity to function as such and is essential to the accomplishment of the specified or assumed objective(s). (JP 5-0)

critical information. Specific facts about friendly intentions, capabilities, and activities vitally needed by adversaries for them to plan and act effectively so as to guarantee failure or unacceptable consequences for friendly mission accomplishment. (JP 2-0)

critical factor (CF). An attribute considered crucial for the accomplishment of the objective. The factor in effect describes the environment (in relationship to the objective) and must be identified and classified as either sufficient (critical strength) or insufficient (critical weakness). (NTRP 1-02)

critical requirement. An essential condition, resource, and means for a critical capability to be fully operational. (JP 5-0)

critical strength. A capability considered vital for the accomplishment of a given or assumed military objective. (NTRP 1-02)

critical vulnerability. An aspect of a critical requirement which is deficient or vulnerable to direct or indirect attack that will create decisive or significant effects. (JP 5-0)

critical weaknesses. Aspects or components of the adversary's capabilities that are deficient or vulnerable to neutralization, interdiction, or attack in a manner achieving decisive or significant results disproportionate to the military sources. (NTRP 1-02)

daily intentions message (DIM) An unformatted message with an immediate impact on operations, intended to convey direction from the latest iteration of the commander's decision cycle. The DIM is issued at operational and tactical levels of command to amplify or modify information contained in orders, OPGENs, OPTASKs and their supplements. (Derived from NWP 3-56)

deception. Those measures designed to mislead the enemy by manipulation, distortion, or falsification of evidence to induce the enemy to react in a manner prejudicial to the enemy's interests. (JP 3-13.4)

decision support template. A combined intelligence and operations graphic based on the results of wargaming. The decision support template 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. (JP 2-01.3.)

decisive point. A geographic place, specific key event, critical factor, or function that, when acted upon, allows commanders to gain a marked advantage over an adversary or contribute materially to achieving success. See also center of gravity. (JP 5-0)

defensive sea area. A sea area, usually including the approaches to and the waters of important ports, harbors, bays, or sounds, for the control and protection of shipping; for the safeguarding of defense installations bordering on waters of the areas; and for provision of other security measures required within the specified areas. It does not extend seaward beyond the territorial waters. (JP 1-02)

defense support of civil authorities (DSCA). Support provided by U.S. Federal military forces, Department of Defense civilians, Department of Defense contract personnel, Department of Defense component assets, and National Guard forces (when the Secretary of Defense, in coordination with the governors of the affected states, elects and requests to use those forces in Title 32, United States Code, status) in response to requests for assistance from civil authorities for domestic emergencies, law enforcement support, and other domestic activities, or from qualifying entities for special events. Also known as civil support. (DODD 3025.18)

design. The conception and articulation of a framework for solving a problem. (MCWP 5-1)

direct support (DS). A mission requiring a force to support another specific force and authorizing it to answer directly to the supported force's request for assistance. (JP 3-09.3)

directive authority for logistics (DAFL). Combatant commander authority to issue directives to subordinate commanders, including peacetime measures, necessary to ensure the effective execution of approved operation plans. Essential measures include the optimized use or reallocation of available resources and prevention or elimination of redundant facilities and/or overlapping functions among the Service component commands. (JP 1-02)

disaster relief (DR). Goods and services provided to meet the immediate needs of disaster-affected communities. (NWP 3-29)

disaster response. Operations, both foreign and domestic, which provide immediate aid to save lives, alleviate the suffering of disaster affected populations, and prevent significant property damage when the magnitude of the disaster exceeds the impacted sovereign states' and humanitarian community response capabilities. (Definition derived from NWP 3-29 section 1.7.2)

economy of force. The allocation of minimum essential combat capability to supporting efforts, with attendant degree of risk, so that combat power may be concentrated on the main effort. Economy of force is used to describe a principle of war and a condition of tactical operations; it is not used to describe a mission. (MCRP 5-12C)

effect. 1. The physical or behavioral state of a system that results from an action, a set of actions, or another effect. 2. The result, outcome, or consequence of an action. 3. A change to a condition, behavior, or degree of freedom. (JP 3-0)

electronic warfare (EW). Military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy. Electronic warfare consists of three divisions: Electronic attack, Electronic protection, and Electronic warfare support. (JP 3-13.1)

essential elements of friendly information (EEFI). Key questions likely to be asked by adversary officials and intelligence systems about specific friendly intentions, capabilities, and activities, so they can obtain answers critical to their operational effectiveness. (JP 2-01)

essential task. A specified or implied task that an organization must perform to accomplish the mission that is typically included in the mission statement. See also implied task; specified task. (JP 5-0)

★**evaluation criteria.** Standards used by the staff to during COA analysis and comparison to help identify advantages and disadvantages of the various COAs with the intent of making a decision recommendation to the commander. They include the commander's governing factors, but may also include other criteria developed by the staff as a result of their staff estimates. If they are not received directly, the staff can derive them from the commander's intent statement. Evaluation criteria do not stand alone, each must have a clearly defined definition to minimize confusion. (Unapproved Definition)

exclusive economic zone (EEZ). A maritime zone adjacent to the territorial sea that may not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured. (JP 3-15)

execute order (EXORD): 1. An order issued by the Chairman of the Joint Chiefs of Staff, at the direction of the Secretary of Defense, to implement a decision by the President to initiate military operations. An order to initiate military operations as directed. (JP 5-0)

expanded maritime interception operations (EMIO). Broadened maritime interception operations to intercept targeted personnel or material that poses an imminent threat to the United States. EMIO may involve multinational forces and may be implemented without sanctions. (NTRP 2-01)

expeditionary force. An armed force organized to achieve a specific objective in a foreign country. (JP 3-0)

force protection (FP). Preventive measures taken to mitigate hostile actions against Department of Defense personnel (to include family members), resources, facilities, and critical information. (JP 3-0)

foreign humanitarian assistance (FHA). Department of Defense activities, normally in support of the United States Agency for International Development or Department of State, conducted outside the United States, its territories, and possessions to relieve or reduce human suffering, disease, hunger, or privation. (JP 3-29)

fragmentary order (FRAGORD). An abbreviated form of an operation order issued as needed after an operation order to change or modify that order or to execute a branch or sequel to that order. (JP 5-0)

friendly force information requirement (FFIR). Information the commander and staff need to understand the status of friendly force and supporting capabilities. (JP 3-0)

functional component command. A command normally, but not necessarily, composed of forces of two or more Military Departments which may be established across the range of military operations to perform particular operational missions that may be of short duration or may extend over a period of time. (JP 1-02)

Global Force Management Allocation Plan (GFMAP). CJCS document approved by the Secretary of Defense that authorizes force allocations and deployment of forces in support of combatant command rotational force requirements (CJCSI 3100.01B).

★**governing factors.** Those aspects of the situation (or externally imposed factors) that the commander deems critical to mission accomplishment. The planning team can use these factors later to evaluate one COA against another with the intent of making a decision recommendation to the commander. Though the planning team typically drafts the governing factors, they belong to the commander, who may modify the factors at any time and who must ultimately approve them. (Unapproved Definition)

Guidance for Employment of the Force (GEF). DoD directive which provides two-year direction to CCMDs for operational planning, force management, security cooperation, and posture planning. The GEF is the method through which OSD translates strategic priorities set in the NSS, NDS, and QDR into implementable direction for operational activities. (JP 5-0)

harbor approach defense (HAD). The employment of forces to ensure the unimpeded use of an inshore coastal area, including a defensive sea area, by friendly forces and, as appropriate, to deny the use of the area to enemy forces. (NTRP 2-01)

harbor defense (HD). The defense of a harbor or anchorage and its water approaches against external threats such as: a. submarine, submarine-borne, or small surface craft attack; b. enemy mine laying operations; and c. sabotage. The defense of a harbor from guided missiles while such missiles are airborne is considered to be a part of air defense. See also port security. (NTRP 2-01)

high-payoff target (HPT). A target whose loss to the enemy will significantly contribute to the success of the friendly course of action. High-payoff targets are those high-value targets that must be acquired and successfully attacked for the success of the friendly commander's mission. (JP 3-60)

high-value target (HVT). A target the enemy commander requires for the successful completion of the mission. The loss of high-value targets would be expected to seriously degrade important enemy functions throughout the friendly commander's area of interest. (JP 3-60)

human intelligence (HUMINT). A category of intelligence derived from information collected and provided by human sources. (JP 2-0)

humanitarian assistance (HA). Programs conducted to relieve or reduce the results of natural or manmade disasters or other endemic conditions such as human pain, disease, hunger, or privation that might present a serious threat to life or that can result in great damage to or loss of property. Humanitarian assistance provided by U.S. forces is limited in scope and duration. The assistance provided is designed to supplement or complement the efforts of the host nation civil authorities or agencies that may have the primary responsibility for providing humanitarian assistance. (JP 3-57)

implied task. In the context of joint operation planning, a task derived during mission analysis that an organization must perform or prepare to perform to accomplish a specified task or the mission, but which is not stated in the higher headquarters order. See also essential task; specified task. (JP 5-0)

information assurance (IA). Measures that protect and defend information and information systems by ensuring their availability, integrity, authentication, confidentiality, and nonrepudiation. This includes providing for restoration of information systems by incorporating protection, detection, and reaction capabilities. (JP 3-13)

information operations (IO). The integrated employment, during military operations, of information-related capabilities in concert with other lines of operation to influence, disrupt, corrupt, or usurp the decision-making of adversaries and potential adversaries while protecting our own. (JP 1-02)

incident command system (ICS). A standardized on-scene emergency management construct designed to aid in the management of resources during incidents. Consists of facilities, equipment, personnel, procedures, and communications established for this purpose. (JP 3-28)

intelligence preparation of the operational environment (IPOE). An analytical methodology employed to reduce uncertainties concerning the enemy, environment, and terrain for all types of operations. Intelligence preparation of the operational environment builds an extensive database for each potential area in which a unit may be required to operate. The database is then analyzed in detail to determine the impact of the enemy, environment, and terrain on operations and presents it in graphic form. Intelligence preparation of the operational environment is a continuing process. (NTRP 2-01)

intelligence requirement. 1. Any subject, general or specific, upon which there is a need for the collection of information, or the production of intelligence. **2.** A requirement for intelligence to fill a gap in the command's knowledge or understanding of the operational environment or threat forces. See also intelligence; priority intelligence requirement. (JP 2-0)

intelligence source. The means or system that can be used to observe and record information relating to the condition, situation, or activities of a targeted location, organization, or individual. An intelligence source can be people, documents, equipment, or technical sensors. (JP 2-0)

intelligence, surveillance, and reconnaissance (ISR). An activity that synchronizes and integrates the planning and operation of sensors, assets, and processing, exploitation, and dissemination systems in direct support of current and future operations. This is an integrated intelligence and operations function. (JP 2-01)

interdiction. 1. An action to divert, disrupt, delay, or destroy the enemy's military surface capability before it can be used effectively against friendly forces, or to otherwise achieve objectives. **2.** In support of law enforcement, activities conducted to divert, disrupt, delay, intercept, board, detain, or destroy, under lawful authority, vessels, vehicles, aircraft, people, cargo, and money. (JP 3-03)

interoperability. The ability to operate in synergy in the execution of assigned tasks. (JP 3-0) **2.** The condition achieved among communications-electronics systems or items of communications-electronics equipment when information or services can be exchanged directly and satisfactorily between them and/or their users. The degree of interoperability should be defined when referring to specific cases. (JP 6-0)

joint force. A general term applied to a force composed of significant elements, assigned or attached, of two or more Military Departments operating under a single joint force commander. (JP 3-0)

joint force air component commander (JFACC). The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for recommending the proper employment of assigned, attached, and/or made available for tasking air forces; planning and coordinating air operations; or accomplishing such operational missions as may be assigned. (JP 3-0)

joint force commander (JFC). A general term applied to a combatant commander, subunified commander, or joint task force commander authorized to exercise combatant command (command authority) or operational control over a joint force. (JP 1-02)

joint force land component commander (JFLCC). The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for recommending the proper employment of assigned, attached, and/or made available for tasking land forces; planning and coordinating land operations; or accomplishing such operational missions as may be assigned. (JP 3-0)

joint force maritime component commander (JFMCC). The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for recommending the proper employment of assigned, attached, and/or made available for tasking maritime forces and assets; planning and coordinating maritime operations; or accomplishing such operational missions as may be assigned. (JP 3-0)

joint functions. Related capabilities and activities placed into six basic groups of command and control, intelligence, fires, movement and maneuver, protection, and sustainment to help joint force commanders synchronize, integrate, and direct joint operations. (JP 3-0)

joint integrated prioritized target list (JIPTL). A prioritized list of targets approved and maintained by the joint force commander. Targets and priorities are derived from the recommendations of components and other appropriate agencies, in conjunction with their proposed operations supporting the joint force commander's objectives and guidance. (JP 3-60)

joint intelligence preparation of the operational environment (JIPOE). 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. It is a continuous process that includes defining the operational environment; describing the impact of the operational environment; evaluating the adversary; and determining adversary courses of action. (JP 2-01.3)

joint logistics over-the-shore operations (JLOTS). Operations in which Navy and Army logistics over-the-shore forces conduct logistics over-the-shore operations together under a joint force commander. (JP 4-01.2)

Joint Operation Planning and Execution System (JOPES). An Adaptive Planning and Execution system technology. See Adaptive Planning and Execution system (APEX). (JP 5-0)

joint operations. A general term to describe military actions conducted by joint forces and those Service forces employed in specified command relationships with each other, which of themselves, do not establish joint forces. (JP 3-0)

joint operations area (JOA). An area of land, sea, and airspace, defined by a geographic combatant commander or subordinate unified commander, in which a joint force commander (normally a joint task force commander) conducts military operations to accomplish a specific mission. (JP 3-0)

joint planning group (JPG). A planning organization consisting of designated representatives of the joint force headquarters principal and special staff sections, joint force components (Service and/or functional), and other supporting organizations or agencies as deemed necessary by the joint force commander. (JP 5-0)

Joint Strategic Capabilities Plan (JSCP). A plan that provides guidance to the combatant commanders and the Joint Chiefs of Staff to accomplish tasks and missions based on current military capabilities. (JP 5-0)

joint targeting coordination board (JTCB). A group formed by the joint force commander to accomplish broad targeting oversight functions that may include but are not limited to coordinating targeting information, providing targeting guidance and priorities, and refining the joint integrated prioritized target list. The board is normally comprised of representatives from the joint force staff, all components, and if required, component subordinate units. (JP 3-60)

joint task force (JTF). A joint force that is constituted and so designated by the Secretary of Defense, a combatant commander, a subunified commander, or an existing joint task force commander. (JP 1)

law of war. That part of international law that regulates the conduct of armed hostilities. Also called the law of armed conflict. See also rules of engagement. (JP 1-04)

line of effort (LOE). In the context of joint operation planning, using the purpose (cause and effect) to focus efforts toward establishing operational and strategic conditions by linking multiple tasks and missions. (JP 5-0)

line of operation (LOO). A line that defines the interior or exterior orientation of the force in relation to the enemy or that connects actions on nodes and/or decisive points related in time and space to an objective(s). (JP 5-0)

link. 1. A behavioral, physical, or functional relationship between nodes. 2. In communications, a general term used to indicate the existence of communications facilities between two points. 3. A maritime route, other than a coastal or transit route, which links any two or more routes. (JP 3-0)

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 2-01.3)

logistics. Planning and executing the movement and support of forces. It includes those aspects of military operations that deal with: a. design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of materiel; b. movement, evacuation, and hospitalization of personnel; c. acquisition or construction, maintenance, operation, and disposition of facilities; and d. acquisition or furnishing of services. (JP 4-0)

maneuver. 1. A movement to place ships, aircraft, or land forces in a position of advantage over the enemy. 2. A tactical exercise carried out at sea, in the air, on the ground, or on a map in imitation of war. 3. The operation of a ship, aircraft, or vehicle, to cause it to perform desired movements. 4. Employment of forces in the operational area through movement in combination with fires to achieve a position of advantage in respect to the enemy. (JP 3-0)

Marine expeditionary brigade (MEB). A Marine air-ground task force that is constructed around an infantry regiment reinforced, a composite Marine aircraft group, and a combat logistics regiment. The Marine expeditionary brigade, commanded by a general officer, is task-organized to meet the requirements of a specific situation. It can function as part of a joint task force, as the lead echelon of the Marine expeditionary force, or alone. It varies in size and composition and is larger than a Marine expeditionary unit but smaller than a Marine expeditionary force. The Marine expeditionary brigade

is capable of conducting missions across the full range of military operations. In a joint or multinational environment, it may also contain other Service or multinational forces assigned or attached to the Marine air-ground task force. (MCRP 5-12C)

Marine expeditionary force (MEF). The largest Marine air-ground task force and the Marine Corps' principal warfighting organization, particularly for larger crises or contingencies. It is task-organized around a permanent command element and normally contains one or more Marine divisions, Marine aircraft wings, and Marine logistics groups. The Marine expeditionary force is capable of missions across the range of military operations, including amphibious assault and sustained operations ashore in any environment. It can operate from a sea base, a land base, or both. In a joint or multinational environment, it may also contain other Service or multinational forces assigned or attached to the Marine air-ground task force. (MCRP 5-12C)

Marine expeditionary unit (MEU). A Marine air-ground task force that is constructed around an infantry battalion reinforced, a composite squadron reinforced, and a task-organized logistics combat element. It normally fulfills Marine Corps' forward sea-based deployment requirements. The Marine expeditionary unit provides an immediate reaction capability for crisis response and is capable of limited combat operations. In a joint or multinational environment, it may contain other Service or multinational forces assigned or attached to the Marine air-ground task force. (MCRP 5-12C)

Marine logistics group (MLG). The logistics combat element of the Marine expeditionary force. It is a permanently organized command tasked with providing combat service support beyond the organic capabilities of supported units of the Marine expeditionary force. The Marine logistics group is normally structured with direct and general support units, which are organized to support a Marine expeditionary force possessing one Marine division and one Marine aircraft wing. The Marine logistics group may also provide smaller task-organized logistics combat elements to support Marine air-ground task forces smaller than a Marine expeditionary force. (MCRP 5-12C)

maritime control area. An area generally similar to a defensive sea area in purpose except that it may be established any place on the high seas. Maritime control areas are normally established only in time of war. (JP 3-32)

maritime interception operations (MIO). Efforts to monitor, query, and board merchant vessels in international waters to enforce sanctions against other nations such as those in support of United Nations Security Council Resolutions and/or prevent the transport of restricted goods. (JP 3-03)

maritime operations center (MOC). 1. The collective name for the boards, bureaus, cells, centers, and working groups that execute the maritime headquarters maritime operations functions. 2. A physical space in the maritime headquarters that is principally used for the monitoring, assessing, planning, and direction of current operations. (NTRP 2-01)

maritime power projection. Power projection in and from the maritime environment, including a broad spectrum of offensive military operations to destroy enemy forces or logistic support or to prevent enemy forces from approaching within enemy weapons' range of friendly forces. maritime Power projection may be accomplished by amphibious assault operations, attack of targets ashore, or support of sea control operations. (JP 3-32)

maritime pre-positioning force (MPF). A task organization of units under one commander formed for the purpose of introducing a Marine air-ground task force and its associated equipment and supplies into a secure area. The maritime pre-positioning force is composed of a command element, a

maritime pre-positioning ships squadron, a Marine air-ground task force, and a Navy support element. (MCRP 5-12C)

maritime pre-positioning ships squadron (MPSRON). A group of civilian-owned and civilian-crewed ships chartered by Military Sealift Command loaded with pre-positioned equipment and 30 days of supplies to support up to a maritime pre-positioning force Marine air-ground task force. (MCRP 5-12C)

maritime security operations (MSO). Those operations to protect maritime sovereignty and resources and to counter maritime-related terrorism, weapons proliferation, transnational crime, piracy, environmental destruction, and illegal seaborne immigration. (NTRP 2-01)

maritime superiority. That degree of dominance of one force over another that permits the conduct of maritime operations by the former and its related land, sea, and air forces at a given time and place without prohibitive interference by the opposing force. (JP 1-02)

★**maritime support plan (MARSUPPLAN).** A maritime operations plan prepared by the maritime component commander to satisfy the requests or requirements of the supported commander's plan. (term is in JP 3-32, no definition)

maritime supremacy. That degree of maritime superiority wherein the opposing force is incapable of effective interference. (JP 1-02)

master air attack plan (MAAP). A plan that contains key information that forms the foundation of the joint air tasking order. Sometimes referred to as the air employment plan or joint air tasking order shell. Information that may be found in the plan includes joint force commander guidance, joint force air component commander guidance, support plans, component requests, target update requests, availability of capabilities and forces, target information from target lists, aircraft allocation, etc. (JP 3-60)

measure of effectiveness (MOE). A criterion used to assess changes in system behavior, capability, or operational environment that is tied to measuring the attainment of an end state, achievement of an objective, or creation of an effect. (JP 3-0)

measure of performance (MOP). A criterion used to assess friendly actions that is tied to measuring task accomplishment. (JP 3-0)

military information support operations (MISO). Planned operations to convey selected information and indicators to foreign audiences to influence their emotions, motives, objective reasoning, and ultimately the behavior of foreign governments, organizations, groups, and individuals in a manner favorable to the originator's objectives. (JP 3-13.2)

mine warfare (MIW). The strategic, operational, and tactical use of mines and mine countermeasures either by emplacing mines to degrade the enemy's capabilities to wage land, air, and maritime warfare or by countering of enemy-emplaced mines to permit friendly maneuver or use of selected land or sea areas. (JP 3-15)

mission. 1. The task, together with the purpose, that clearly indicates the action to be taken and the reason therefore. (JP 3-0) 2. In common usage, especially when applied to lower military units, a duty assigned to an individual or unit; a task. (JP 3-0) 3. The dispatching of one or more aircraft to accomplish one particular task. (JP 3-30)

mission command. The conduct of military operations through decentralized execution based upon mission-type orders. (JP 3-31)

modified combined obstacle overlay (MCOO). 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. (JP 2-01.3)

mutual support. That support which units render each other against an enemy, because of their assigned tasks, their position relative to each other and to the enemy, and their inherent capabilities. (JP 3-31)

named area of interest (NAI). A geospatial area or systems node or link against which information that will satisfy a specific information requirement can be collected. Named areas of interest are usually selected to capture indications of adversary courses of action, but also may be related to conditions of the operational environment. (JP 2-01.3)

national intelligence support team (NIST). A nationally sourced team composed of intelligence and communications experts from Defense intelligence Agency, Central intelligence Agency, national Geospatial-intelligence Agency, national Security Agency, or other intelligence community agencies as required. (JP 2-0)

national military strategy (NMS). A document approved by the Chairman of the Joint Chiefs of Staff for distributing and applying military power to attain national security strategy and national defense strategy objectives. (JP 3-0)

Navy component commander (NCC). The commander of a naval component assigned or attached to a joint force (unified command) constituted and so designated by the Joint Chiefs of Staff or by a commander of an existing unified command that was established by the Joint Chiefs of Staff. (NTRP 1-02)

Navy operational functions. Those actions by which the commander achieves unity of effort and builds, projects, and sustains combat power. Their effective application in concert with one another facilitates planning and conduct of naval operations. Functions include force application, battlespace awareness, force management, command and control, net-centric environment, focused logistics, and force protection. (NTRP 1-02)

node. 1. A location in a mobility system where a movement requirement is originated, processed for onward movement, or terminated. (JP 3-17) 2. In communications and computer systems, the physical location that provides terminating, switching, and gateway access services to support information exchange. (JP 6-0) 3. An element of a system that represents a person, place, or physical thing. (JP 3-0)

objective. 1. The clearly defined, decisive, and attainable goal toward which every operation is directed. 2. The specific target of the action taken which is essential to the commander's plan. (JP 5-0)

operation. 1. A series of tactical actions with a common purpose or unifying theme. (JP 1) 2. A military action or the carrying out of a strategic, operational, tactical, service, training, or administrative military mission. (JP 3-0)

operational art. The application of creative imagination by commanders and staffs — supported by their skill, knowledge, and experience — to design strategies, campaigns, and major operations and

organize and employ military forces. Operational art integrates ends, ways, and means across the levels of war. (JP 1-02)

operational control (OPCON). Command authority that may be exercised by commanders at any echelon at or below the level of combatant command. Operational control is inherent in combatant command (command authority) and may be delegated within the command. When forces are transferred between combatant commands, the command relationship the gaining commander will exercise (and the losing commander will relinquish) over these forces must be specified by the Secretary of Defense. Operational control is the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. Operational control includes authoritative direction over all aspects of military operations and joint training necessary to accomplish missions assigned to the command. Operational control should be exercised through the commanders of subordinate organizations. Normally this authority is exercised through subordinate joint force commanders and Service and/or functional component commanders. Operational control normally provides full authority to organize commands and forces and to employ those forces as the commander in operational control considers necessary to accomplish assigned missions; it does not, in and of itself, include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training. (JP 1-02)

operational design. The conception and construction of the framework that underpins a campaign or major operation plan and its subsequent execution. See also campaign; major operation. See design. (JP 5-0)

operational general (OPGEN) messages. Maritime-unique formatted message used by both the U.S. Navy and NATO to promulgate general matters of policy and instructions and common aspects of operations; also may include detailed instructions for warfare responsibilities. (NTRP 1-02)

operational level of war. The level of war at which campaigns and major operations are planned, conducted, and sustained to achieve strategic objectives within theaters or other operational areas. See also strategic level of war; tactical level of war. (JP 3-0)

operation order (OPORD). A directive issued by a commander to subordinate commanders for the purpose of effecting the coordinated execution of an operation. (JP 5-0)

operation plan (OPLAN). 1. Any plan for the conduct of military operations prepared in response to actual and potential contingencies. 2. A complete and detailed joint plan containing a full description of the concept of operations, all annexes applicable to the plan, and a time-phased force and deployment data. (JP 5-0)

operations security (OPSEC). A process of identifying critical information and subsequently analyzing friendly actions attendant to military operations and other activities. (JP 3-13.3)

planned targets. Target that is known to exist in the operational environment, upon which actions are planned using deliberate targeting, creating effects which support commander's objectives. There are two types of planned targets: scheduled and on-call. (JP 3-60)

operational tasking (OPTASK) messages. Maritime-unique formatted message used by both the U.S. Navy and NATO to provide detailed information for specific aspects within individual areas of warfare and for tasking resources. This includes logistics, may be issued at all levels above the unit, and may be Navy-wide or focused on a particular theater or strike group. (NTRP 1-02)

planning order. A planning directive that provides essential planning guidance and directs the initiation of execution planning before the directing authority approves a military course of action. Also called PLANORD. See also execution planning. (JP 5-0)

prepare to deploy order (PTDO). An order issued by competent authority to move forces or prepare forces for movement (e.g., increase deployability posture of units). (JP 5-0)

principles of joint operations. These principles guide warfighting at the strategic, operational, and tactical levels and combine the nine historical principles of war with three additional principles born out of recent experience across the range of military operations. Also see JP 3-0 (NDP 1)

priority intelligence requirement (PIR). An intelligence requirement, stated as a priority for intelligence support, that the commander and staff need to understand the adversary or other aspects of the operational environment. (JP 2-01)

public affairs (PA). Those public information, command information, and community engagement activities directed toward both the external and internal publics with interest in the Department of Defense. (JP 3-61)

request for information (RFI). 1. Any specific time-sensitive ad hoc requirement for intelligence information or products to support an ongoing crisis or operation not necessarily related to standing requirements or scheduled intelligence production. A request for information can be initiated to respond to operational requirements and will be validated in accordance with the combatant command's procedures. 2. The National Security Agency/Central Security Service uses this term to state ad hoc signals intelligence requirements. (JP 2-0)

restraint. In the context of joint operation planning, a requirement placed on the command by a higher command that prohibits an action, thus restricting freedom of action. See constraint (JP 5-0)

rules of engagement (ROE). Directives issued by competent military authority that delineate the circumstances and limitations under which United States forces will initiate and/or continue combat engagement with other forces encountered. (JP 1-04)

★**running estimate.** A staff estimate which is continuously updated with new information as the operation proceeds. See also staff estimate. (Unapproved Definition)

search and rescue (SAR). The use of aircraft, surface craft, submarines, and specialized rescue teams and equipment to search for and rescue distressed persons on land or at sea in a permissive environment. See also combat search and rescue (CSAR) and tactical recovery of aircraft and personnel (TRAP). (JP 3-50)

sanction enforcement. Operations that employ coercive measures to control the movement of certain types of designated items into or out of a nation or specified area. (JP 3-0)

sea control operations. The employment of naval forces, supported by land and air forces as appropriate, in order to achieve military objectives in vital sea areas. Such operations include destruction of enemy naval forces, suppression of enemy sea commerce, protection of vital sea lanes, and establishment of local military superiority in areas of naval operations. (JP 3-32)

seaport of debarkation (SPOD). The port at which cargo or personnel are discharged. (NTRP 1-02)

seaport of embarkation (SPOE). The port in a routing scheme from which cargo or personnel depart to a seaport of debarkation. For unit and nonunit requirements, it may not coincide with the origin. (NTRP 1-02)

security cooperation (SC). All Department of Defense interactions with foreign defense establishments to build defense relationships that promote specific US security interests, develop allied and friendly military capabilities for self-defense and multinational operations, and provide US forces with peacetime and contingency access to a host nation. (JP 3-22)

sequel. The subsequent major operation or phase based on the possible outcomes (success, stalemate, or defeat) of the current major operation or phase. See branch (JP 5-0)

Service component command. A command consisting of the Service component commander and all those Service forces, such as individuals, units, detachments, organizations, and installations under that command, including the support forces that have been assigned to a combatant command or further assigned to a subordinate unified command or joint task force. (JP 1)

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. See adversary template (JP 2-01.3)

specified task. In the context of joint operation planning, a task that is specifically assigned to an organization by its higher headquarters. See also essential task; implied task. (JP 5-0)

stability operations. An overarching term encompassing various military missions, tasks, and activities conducted outside the United States in coordination with other instruments of national power to maintain or reestablish a safe and secure environment, provide essential governmental services, emergency infrastructure reconstruction, and humanitarian relief. (JP 3-0)

★ **staff estimate.** A planning tool prepared by functional and special staff that gives supportability assessments of proposed actions to inform planners and assist the commander's decision making. See running estimate. (Unapproved Definition)

strategic communication (SC). Focused United States Government efforts to understand and engage key audiences to create, strengthen, or preserve conditions favorable for the advancement of United States Government interests, policies, and objectives through the use of coordinated programs, plans, themes, messages, and products synchronized with the actions of all instruments of national power. (JP 5-0)

strategic level of war. The level of war at which a nation, often as a member of a group of nations, determines national or multinational (alliance or coalition) strategic security objectives and guidance, then develops and uses national resources to achieve those objectives. (JP 1-02)

strike. An attack to damage or destroy an objective or a capability. (JP 3-0)

subordinate campaign plan. A combatant command prepared plan that satisfies the requirements under a Department of Defense campaign plan, which, depending upon the circumstances, transitions to a supported or supporting plan in execution. (JP 5-0)

support. 1. The action of a force that aids, protects, complements, or sustains another force in accordance with a directive requiring such action. 2. A unit that helps another unit in battle. 3. An

element of a command that assists, protects, or supplies other forces in combat. See also close support; direct support; general support; interdepartmental or agency support; international logistic support; inter-Service support; mutual support. (JP 1-02)

supported commander. 1. The commander having primary responsibility for all aspects of a task assigned by the Joint Strategic Capabilities Plan or other joint operation planning authority. 2. In the context of joint operation planning, the commander who prepares operation plans or operation orders in response to requirements of the Chairman of the Joint Chiefs of Staff. 3. In the context of a support command relationship, the commander who receives assistance from another commander's force or capabilities, and who is responsible for ensuring that the supporting commander understands the assistance required. (JP 3-0)

supporting commander. 1. A commander who provides augmentation forces or other support to a supported commander or who develops a supporting plan. 2. In the context of a support command relationship, the commander who aids, protects, complements, or sustains another commander's force, and who is responsible for providing the assistance required by the supported commander. See also support; supported commander. (JP 3-0)

surface combatant. A ship constructed and armed for combat use with the capability to conduct operations in multiple maritime roles against air, surface and subsurface threats, and land targets. (JP 1-02)

surface warfare (SUW). That portion of maritime warfare in which operations are conducted to destroy or neutralize enemy naval surface forces and merchant vessels. (JP 3-33)

sustainment. The provision of logistics and personnel services required to maintain and prolong operations until successful mission accomplishment. (JP 3-0)

synchronization. 1. The arrangement of military actions in time, space, and purpose to produce maximum relative combat power at a decisive place and time. 2. In the intelligence context, application of intelligence sources and methods in concert with the operation plan to ensure intelligence requirements are answered in time to influence the decisions they support. (JP 1-02)

tactical control (TACON). Command authority over assigned or attached forces or commands, or military capability or forces made available for tasking, that is limited to the detailed direction and control of movements or maneuvers within the operational area necessary to accomplish missions or tasks assigned. Tactical control is inherent in operational control. Tactical control may be delegated to, and exercised at any level at or below the level of combatant command. Tactical control provides sufficient authority for controlling and directing the application of force or Tactical use of combat support assets within the assigned mission or task. (JP 1)

tactical level of war. The level of war at which battles and engagements are planned and executed to achieve military objectives assigned to tactical units or task forces. (JP 3-0)

tactical recovery of aircraft and personnel (TRAP). A Marine Corps mission performed by an assigned and briefed aircrew for the specific purpose of the recovery of personnel, equipment, and/or aircraft when the tactical situation precludes search and rescue assets from responding and when survivors and their location have been confirmed. See also search and rescue (SAR) and combat search and rescue (CSAR). (JP 3-50)

targeting. The process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities. See joint targeting coordination board; target. (JP 3-0)

theater antisubmarine warfare commander (TASWC). A Navy commander assigned to develop plans and direct assigned and attached assets for the conduct of antisubmarine warfare within an operational area. Normally designated as a task force or task group commander and responsible to a Navy component commander or joint force maritime component commander. (JP 3-32)

theater of operations (TO). An operational area defined by the geographic combatant commander for the conduct or support of specific military operations. (JP 3-0)

time-phased force and deployment data (TPFDD). The time-phased force data, non-unit-related cargo and personnel data, and movement data for the operation plan or operation order, or ongoing rotation of forces. Also called TPFDD. See also time-phased force and deployment list. (JP 5-0)

times. The Chairman of the Joint Chiefs of Staff coordinates the proposed dates and times with the commanders of the appropriate unified and specified commands, as well as any recommended changes when specified operations are to occur (C-, D-, M-days end at 2400 hours Universal time [Zulu time] and are assumed to be 24 hours long for planning). (JP 5-0).

- **C-Day** - The unnamed day on which a deployment operation commences or is to commence. (JP 5-0)
- **D-Day** - Unnamed day on which operations commence or are scheduled to commence. (JP 1-02)
- **M-Day** - Mobilization day; unnamed day on which mobilization of forces begins. (JP 1-02)
- **N-Day** - Day an active duty unit is notified for deployment or redeployment. (JP 1-02)
- **O-Day** - off-load day. (JP 1-02)
- **R-Day** - The day on which redeployment of major combat, combat support, and combat service support forces begins in an operation. (NTRP 1-02) (JP 1-02)
- **S-Day** - Day the President authorizes selective reserve call-up. (JP 1-02)
- **T-Day** - Effective day coincident with Presidential declaration of a National Emergency and authorization of partial mobilization. (JP 1-02)
- **W-Day** - Declared by the President, W-day is associated with an adversary decision to prepare for war. (JP 1-02)
- **F-Hour** - Effective time of announcement by the Secretary of Defense to the Military Departments of a decision to mobilize Reserve units. (JP 1-02)
- **H-Hour** - 1. Seaborne assault landing hour; specific time an operation or exercise begins. (JP 1-02) 2. The specific hour on D-day at which a particular operation commences. (JP 5-0)
- **L-Hour** - The specific hour on C-day at which a deployment operation commences or is to commence. (JP 5-0)

time-sensitive target (TST). A joint force commander designated target requiring immediate response because it is a highly lucrative, fleeting target of opportunity or it poses (or will soon pose) a danger to friendly forces. (JP 3-60)

unified action. The synchronization, coordination, and/or integration of the activities of governmental and nongovernmental entities with military operations to achieve unity of effort. (JP 1)

unified command. A command with a broad continuing mission under a single commander and composed of significant assigned components of two or more Military Departments that is established and so designated by the President, through the Secretary of Defense with the advice and assistance of the Chairman of the Joint Chiefs of Staff. Also called unified combatant command. (JP 1)

vulnerability assessment (VA). A Department of Defense, command, or unit-level evaluation (assessment) to determine the vulnerability of a terrorist attack against an installation, unit, exercise, port, ship, residence, facility, or other site. Identifies areas of improvement to withstand, mitigate, or deter acts of violence or terrorism. (JP 3-07.2)

warning order (WARNORD). 1. A preliminary notice of an order or action that is to follow. 2. A planning directive that initiates the development and evaluation of military courses of action by a supported commander and requests that the supported commander submit a commander's estimate. 3. A planning directive that describes the situation, allocates forces and resources, establishes command relationships, provides other initial planning guidance, and initiates subordinate unit mission planning. (JP 5-0)

waterspace management (WSM). The allocation of waterspace in terms of antisubmarine warfare attack procedures to permit the rapid and effective engagement of hostile submarines while preventing inadvertent attacks on friendly submarines. (JP 3-32)

APPENDIX P: Abbreviations and Acronyms

AADC	area air defense commander
ABCCC	airborne battlefield command and control center
ACA	airspace control authority
ACCE	air component coordination element
ACE	aviation combat element
AD	air defense
ADC	area damage control
ADZ	amphibious defense zone
AFFOR	Air Force forces
AI	area of interest; air interdiction
AIRFOR	air forces
ALOC	air lines of communications
AO	area of operations
AOA	amphibious objective area
AOC	air operations center
AOI	area of interest
AOR	area of responsibility
APOD	aerial port of debarkation
APOE	aerial port of embarkation
APEX	Adaptive Planning and Execution
ARFOR	Army forces
ARG	amphibious ready group
ASCM	antiship cruise missile
ASUW	antisurface warfare
ASW	antisubmarine warfare
AT	antiterrorism
ATO	air tasking order
AW	air warfare
B2C2WG	boards, bureaus, center, cells, and working groups
BCT	brigade combat team (Army)
BDA	battle damage assessment
BDE	brigade
BN	battalion
BPT	be prepared to
C2	command and control

C2W	command and control warfare
C3IC	coalition coordination, communications, and integration center
CA	civil affairs
CAP	crisis action planning
CAS	close air support
CAT	crisis action team
CC	component command
CCDR	combatant commander
CCIR	commander's critical information requirement
CCOI	critical contact of interest
CDCM	coastal defense cruise missile
CDR	commander
CF	critical factor
CFMCC	combined force maritime component commander
CG	guided missile cruiser
CI	counterintelligence
CIE	collaborative information environment
CIEA	classification, identification, and engagement area
CJCS	Chairman of the Joint Chiefs of Staff
CJCSM	Chairman of the Joint Chiefs of Staff manual
CJTF	commander, joint task force; combined joint task force (NATO)
CMB	collection management board
CMO	civil-military operations
CMOC	civil-military operations center; Cheyenne Mountain Operations Center
COA	course of action
COCOM	combatant command (command authority)
COG	center of gravity
COI	contact of interest
COMNAVFOR	commander, Navy forces
COMSEC	communications security
CONOPS	concept of operations
CONPLAN	concept plan
COP	common operational picture
COPS	current operations
COS	chief of staff
CR	critical requirement
CRAF	Civil Reserve Air Fleet
CRD	combatant commander's required date

CS	combat support
CSAR	combat search and rescue
CSG	carrier strike group
CSP	campaign support plan
CSS	combat service support
CT	counterterrorism
CTF	combined task force, commander, task force
CTG	combined task group; commander, tactical air control group; commander, task group
CUL	common-user logistics
CV	critical vulnerability; aircraft carrier
CVN	aircraft carrier, nuclear
CVOA	(aircraft) carrier operating area
CWC	composite warfare commander
DA	direct action
DCJTF	deputy commander, joint task force
DDG	guided missile destroyer
DEAD	destruction of enemy air defenses
DES	desired end state
DESRON	destroyer squadron
DIM	daily intentions message
DIRLAUTH	direct liaison authorized
DISA	Defense Information Systems Agency
DIV	division
DOD	Department of Defense
DOS	Department of State
DP	decision point; decisive point
DPO	distribution process owner
DR	disaster response
DRAW-D	defend, reinforce, attack, withdraw, delay
DS	direct support
DSCA	defense support of civil authorities
EAD	earliest arrival date
EEFI	essential elements of friendly information
EEZ	exclusive economic zone
EMIO	expanded maritime interception operations
ESF	expeditionary strike force
ESG	expeditionary strike group
EW	electronic warfare

EXORD	execute order
FDO	flexible deterrent option
FEZ	fighter engagement zone
FFG	guided missile frigate
FFIR	friendly force information requirement
FHA	foreign humanitarian assistance
FID	foreign internal defense
FLTCYBERCOM	Fleet Cyber Command
FOPS	future operations planning cell
FP	force protection
FPC	future plans cell
FRAGORD	fragmentary order
FSCL	fire support coordination line
GCC	geographic combatant commander
GCCS	Global Command and Control System
GEF	Guidance for Employment of the Force
GFMAP	Global Force Management Allocation Plan
GMIG	Global Force Management Implementation Guidance
HA	humanitarian assistance
HAD	harbor approach defense
HA/DR	humanitarian assistance/disaster response (USN usage) disaster relief (Joint usage)
HD	harbor defense
HHQ	higher headquarters
HN	host nation
HNS	host-nation support
HPT	high-payoff target
HQ	headquarters
HQCOMDT	headquarters commandant
HUMINT	human intelligence
HVT	high-value target
I&W	indications and warning
IA	information assurance
IADS	integrated air defense system
IAW	in accordance with
ICW	in conjunction with
ICS	incident command system
IM	information management
IMO	information management officer

IO	information operations
IOT	in order to
IPOE	intelligence preparation of the operational environment
IPR	in-progress review
IR	intelligence requirement
ISB	intermediate staging base
ISO	in support of
ISR	intelligence, surveillance, and reconnaissance
IVO	in the vicinity of
J-1	manpower and personnel directorate of a joint staff
J-2	intelligence directorate of a joint staff
J-2X	joint force intelligence directorate counterintelligence and human intelligence staff element
J-2	intelligence directorate of a joint staff
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	command, control, communications and computer systems directorate of a joint staff
J-7	operational plans and joint force development directorate of a joint staff
J-7/JED	joint exercise division
J-31	joint force provider directorate of the joint staff
JAOC	joint air operations center
JCLL	joint center for lessons learned
JCMA	joint communications security monitor activity
JCMB	joint collection management board
JCSE	joint communications support element
JECB	joint effects coordination board
JECC	joint effects coordination cell
JFACC	joint force air component commander
JFC	joint force commander
JFE	joint fires element
JFLCC	joint force land component commander
JFMCC	joint force maritime component commander
JFP	joint force provider
JFSOCC	joint forces special operations component command(er)
JIA	joint individual augmentation
JIC	joint information center
JIOC	joint intelligence operations center

JIPOE	joint intelligence preparation of the operational environment
JIPTL	joint integrated prioritized target list
JISE	joint intelligence support element
JLOTS	joint logistics over-the-shore
JMET	joint mission essential task
JMO	joint maritime operations
JMOC	joint maritime operations cell
JOA	joint operations area
JOC	joint operations center
JOPEs	joint operation planning and execution system
JP	joint publication
JPERSTAT	joint personnel status and casualty report
JPG	joint planning group
JRC	joint reconnaissance center
JRSOI	joint reception, staging, onward movement and integration
JSCP	joint strategic capabilities plan
JSOCC	joint special operations component commander
JSOTF	joint special operations task force
JTAA	joint action area
JTC	joint training confederation
JTCB	joint targeting coordination board
JTF	joint task force
JTF HQ	joint task force headquarters
JTLS	joint theater level simulation
JTTP	joint tactics, techniques, and procedures
JWICS	Joint Worldwide Intelligence Communications System
KMC	knowledge management center
LAD	latest arrival date
LASH	lighter aboard ship
LFA	lead federal agency
LHA	amphibious assault ship (general purpose)
LHD	amphibious assault ship (multi-purpose)
LNO	liaison officer
LOC	line of communications
LOE	line of effort
LOG	logistics
LOO	line of operation
LOGSITREP	logistics situation report

LPD	amphibious transport dock
LSD	landing ship, dock
MA	mission analysis
MAAP	master air attack plan
MARFOR	Marine Corps forces
MARSUPPLAN	maritime supporting plan
MAT	maritime assessment team
MAX	maximum
MCM	mine countermeasures
MCOO	modified combined obstacle overlay
MDA	maritime domain awareness
MDSAG	missile defense surface action groups
MECB	maritime effects coordination board
MEB	Marine expeditionary brigade
MEF	Marine expeditionary force
METOC	meteorological and oceanographic
METT-TC	mission, enemy, terrain and weather, time, troops available, and civilian
MEU	Marine expeditionary unit
MEZ	missile engagement zone
MHC	mine hunter, coastal
MIAC	maritime intelligence analysis center
MIO	maritime interception operations
MISO	military information support operations
MIW	mine warfare
MLG	Marine logistics group
MNF	multinational force
MOC	maritime operations center
MODLOC	miscellaneous operational details, local operations
MOE	measure of effectiveness
MOOSEMUSS	mass, objective, offensive, security, economy of force, maneuver, unity of command, surprise, and simplicity
MOP	measure of performance
MOPP	mission-oriented protective posture
MOUT	military operations in urban terrain
MPA	maritime patrol aircraft
MPC	maritime planning center
MPF	maritime pre-positioning force
MPG	main planning group

MPSRON	maritime preposition ships squadron
MSC	maritime support center; military sealift command
MSCP	maritime security cooperation plan
MSG	message
MSO	maritime special operations; maritime security operations
MSR	maritime support request; main supply route
MTW	major theater war
N-1	Navy component manpower or personnel staff officer
N-2	Navy component intelligence staff officer
N-2X	Maritime Force intelligence directorate counterintelligence and human intelligence staff element
N-3	Navy component operations staff officer
N-4	Navy component logistics staff officer
N-5	Navy component plans staff officer
N-6	Navy component communications staff officer
N-7	operational plans and maritime force development
N-7/JED	Navy component maritime exercise division
NAI	named area of interest
NALE	naval and amphibious liaison element
NAVFOR	Navy forces
NAVSUP	Naval Supply Systems Command
NBC	nuclear, biological, and chemical
NCB	naval construction brigade
NCC	Navy component commander
NEC	Navy enlisted classification
NECC	Navy Expeditionary Combat Command
NEO	noncombatant evacuation operation
NGO	nongovernmental organization
NIPRNET	non-secure internet protocol router network
NIST	national intelligence support team
nm	nautical mile
NMET	Navy mission essential tasks
NMETL	Navy mission essential task list
NMS	national military strategy
NOMS	nominations
NPP	Navy planning process
NSA	National Security Agency
NSFS	naval surface fire support

NSW	naval special warfare
NSWRON	naval special warfare squadron
NTTL	naval tactical task list
NTTP	naval tactics, techniques and procedures
NWP	naval warfare publication
OA	objective area; operating assembly; operational area; Operations Aerology shipboard METOC division
OBJ	objective
OE	operational environment
O/O	on order
OPAREA	operating area
OPCON	operational control
OPG	operations planning group
OPGEN	operational general (message)
OPLAN	operation plan
OPORD	operation order
OPT	operational planning team
OPS	operations
OPSEC	operations security
OPTASK	operation tasking (message)
OSC	on-scene commander
PA	public affairs
PAO	public affairs officer
PAX	passengers
PCA	Posse Comitatus Act
PIR	priority intelligence requirement
PLANORD	planning order
POD	port of debarkation
POE	port of embarkation
POL	petroleum, oils, and lubricants
POLAD	political advisor
PMESII	political, military, economic, social, information, and infrastructure
PPD	Presidential policy directive
PR	production requirement
PREPO	prepositioned force, equipment, or supplies
PTDO	prepare to deploy order
PVO	private voluntary organization
R2P2	rapid response planning process (USMC)

RFI	request for information
rng	range
ROE	rules of engagement
RSOI	reception, staging, onward movement, and integration
RTD	returned to duty
RUF	rules for the use of force
SAC	scene-of-action commander
SAM	surface-to-air missile
SAR	search and rescue
SC	strategic communication
SDOB	Secretary of Defense Operations Book (DoDI 1235.12)
SEAD	suppression of enemy air defenses
SIPRNET	SECRET Internet Protocol Router Network
SITREP	situation report
SLOC	sea line of communications
SLURPO	security, legitimacy, unity of effort, restraint, perseverance, and objective
SM	standard missile
SME	subject matter expert
SMEAC	situation, mission, execution, administration and logistics, command and control
SOCCE	special operations command and control element
SOF	special operations forces
SOFA	status of forces agreement
SOP	standard operating procedure
SPINS	special instructions
SPOD	seaport of debarkation
SPOE	seaport of embarkation
SR	special reconnaissance
SRBM	short-range ballistic missile
SROE	standing rules of engagement
SSE	sensitive site exploitation
SSG	surface strike group
SSN	attack submarine, nuclear
STW	strike warfare
SUBFOR	submarine forces
SUPPLAN	support plan
SURFOR	surface forces (USN)
SUW	surface warfare
TACAIR	tactical aircraft (aviation)

TACON	tactical control
TADIL	tactical digital information link
TAI	target area of interest
TASWC	theater antisubmarine warfare commander
TBMD	theater ballistic missile defense
TCP	theater campaign plan
TCS	theater communications system
TET	targeting effects team
TF	task force
TG	task group
TLAM	Tomahawk land attack missile
TPFDD	time-phased force and deployment data
TRAP	tactical recovery of aircraft and personnel
TST	time-sensitive target
TTP	tactics, techniques, and procedures
TTW	territorial waters
UJTL	Universal Joint Task List
UNSCR	United Nations Security Council resolution
UNTL	universal naval task list
URG	underway replenishment group
USA	United States Army
USAF	United States Air Force
USCG	United States Coast Guard
USFF	United States Fleet Forces Command
USMC	United States Marine Corps
USN	United States Navy
USW	undersea warfare
VA	vital area
VBSS	visit, board, search, and seizure
VISA	Voluntary Intermodal Sealift Agreement
VTC	video teleconferencing
WARNORD	warning order
WG	working group
WMD	weapons of mass destruction
WSM	waterspace management

INTENTIONALLY BLANK

NOTES

