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Structuring For Command And Control of Combined Forces in Operations Other Than War

A Monograph
by

Major James B. Henderson

Armor



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ABSTRACT

STRUCTURING FOR COMMAND AND CONTROL OF COMBINED FORCES IN OPERATIONS OTHER THAN WAR by Major James B. Henderson, USA, 54 pages.

This monograph examines the utility of a methodology designed around an organization's information processing requirements as a means for structuring combined forces in operations other than war (OOTW). The hypothetical basis of the methodology is that task-related uncertainty and information processing are inversely related.

A commander's analysis of the combined force's primary tasks and the environment in which it must operate determines the degree of uncertainty that the organization will experience during the mission. The commander uses the methodology to analyze the tasks with respect to their four sources of uncertainty. He then organizes the force around subunit structures and coordinating and controlling mechanisms that are best suited to the degree of uncertainty in the force's primary tasks. By using the methodology, the commander can develop a top-level C2 structure for the force and assess the complexity of the structure and its related resource requirements.

The monograph applies the methodology to Operation Provide Comfort, an OOTW conducted by a combined force drawn from a regionally-based alliance. The monograph concludes that the methodology has utility as a tool for the commander to determine a general structure for his force early in mission analysis. The methodology can also serve as a supplement to the very general U.S. military doctrine for structuring combined forces for OOTW.

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I. INTRODUCTION

There are two certainties for the United States Army as it enters the next millennium. First, the Army's participation in what Field Manual 100-5, Operations, defines as *operations other than war* (OOTW) will continue to expand.¹ The birth of 134 United Nations (UN) member states since 1945 has spawned over 100 internal and external conflicts, many involving the use of military forces in operations other than war. This source of conflict, combined with the two-fold increase in peace operations over the last five years from the 13 such operations between 1948 and 1978, indicates an exponential frequency that ensures near-continuous U.S. involvement in operations other than war.²

Operations other than war are not new to the Army. The Army has participated in OOTW in support of national interests throughout its long history. Recent employment of Army units in Turkey and Iraq, Somalia, and Macedonia typify a pace, frequency, and variety of operations that is on the rise. The U.S. national decisionmaking authorities will continue to employ the Army, in its strategic role, as one of the elements of national power to mitigate worldwide demographic, environmental, and societal stress. Thus, the Army will find its forces more involved in unilateral and multinational efforts aimed at the problems caused by disease and famine, natural disasters, refugee migrations, the erosion of nation-states and international borders, and the rise of private armies and international drug cartels.

The second certainty for the Army as it enters the twenty-first century is that its participation in OOTW will be based on the application of forces as part of a multinational combined force. This assertion becomes more factual as the U.S. continues to reduce the size of its military and the number of operations other than war rises. The participation of U.S. military forces in multinational operations is an effective form of burden-sharing that often increases the resolve of our partners, while reducing the risk from unilateral U.S. action.³ Thus, Army forces will often operate within a combined force structure. The combined force can either be a UN led coalition, an *ad hoc* force, or part of an established regional alliance such as NATO or the Combined Forces Command in South Korea.

The structuring of a combined force for OOTW presents several dilemmas for the military planner. Operations other than war may not require the participation of all the military elements of an established alliance. The identification of units required for the mission and their amalgamation into an effective force requires astute judgment and insight by the combined force commander and planner. The task becomes even more difficult for the commander of an *ad hoc* coalition for the variety of forces provided by participating nations can reach almost unwieldy proportions.⁴ In either case, the ultimate goal of the combined force commander is the attainment of unity of effort through economies of scale. In other words, the commander seeks to make the most efficient use of the forces with which he has to work. This goal requires a sound, effective force structure.

The nature of OOTW and the number of diverse participants complicate the attainment of unity of effort. The environment into which the force deploys and the nature of the missions and tasks that it must accomplish are dynamic and often not well defined.⁵ Joint and U.S. Army doctrine provide some considerations and guidelines to which the combined force commander may refer. However, neither set of doctrine provide adequate guidance, or what is more important a methodology, for developing a command and control structure out of the many diverse forces often furnished for operations other than war.⁶

The methodology that may assist the combined force commander may exist in the theoretical principles for structuring organizations. This monograph investigates the potential application of a methodology founded on theories of organizational structuring that a commander or planner can use to design the command and control structure for a combined force in an operation other than war. The hypothetical basis of the methodology is that uncertainty (the difference between information possessed and information required to complete a task) and information processing are inversely related.⁷ The planner's analysis of the combined force's mission essential tasks and the environment in which it must operate determines the degree of uncertainty that the organization will experience during the mission.

The commander reduces uncertainty and optimizes the information processing capability of the organization by establishing coordinating and controlling relationships within the force. The commander utilizes coordinating

and controlling mechanisms within the combined force structure most appropriate to the degree of uncertainty of its tasks and the environment in which it operates. Thus, the operational capability of the combined force depends on the structural arrangement of a number of subordinate elements and the general scheme by which the elements are connected.⁸ The monograph will determine if this methodology, in addition to current doctrine, is useful to a combined force commander and planner when structuring the force for operations other than war.

Section II will examine the current joint and Army doctrinal concepts for the command and control structure of combined forces. Section III presents a methodology for determining organizational uncertainty in terms of: task complexity, task environment, inter-unit task interdependence, and processes of converting resources into organizational outputs. Application of the methodology to an OOTW case study will determine its utility as an addendum to existing doctrine. Section IV examines Operation Provide Comfort: an OOTW mission utilizing forces, leadership and staff structure from a long-standing, regionally-focused alliance. The methodology determines the degree of uncertainty associated with the primary tasks of Combined Task Force Provide Comfort and the appropriate use of subunit structure and coordinating and controlling mechanisms (standardization of tasks, direct supervision by a hierarchical authority, and direct coordination between subunits at the same hierarchical level) to minimize the uncertainty. A comparative analysis of the actual force structure of the Combined Task Force with the methodology's

hypothetical structure determines the feasibility of the methodology. The principal findings and conclusions are summarized in Section V of the monograph.

II. ANALYSIS OF COMBINED FORCE COMMAND AND CONTROL DOCTRINE

The commander of a combined force is responsible for assigning missions, areas of responsibility, and resources to his subordinate forces. Just as critical is his obligation to establish command and control relationships of the forces assigned to his command. Fulfilling these requirements enables the commander to establish limits, focus effort, and give structure to the force: the control function of the command and control process. The commander seeks efficiency in the command and control process so that he may use his forces to their fullest and most effective capability. Fundamental to the purpose of the command and control process, the achievement of force efficiency, is the timely reduction of uncertainty.⁹ In a complex, multinational force achieving force efficiency is a monumental accomplishment.

Joint and Army doctrinal manuals recognize the importance of force efficiency. Each set of manuals provides a commander with organizational considerations, factors and options for establishing command relationships and staff structure of his forces. The guidance in these doctrinal manuals, however, is too broad in scope to be of real value to the commander and his planners as they seek to build an efficient force. Both sets of command and control doctrine appear to have their foundation in combat operations conducted by large-scale formations. Additionally, there is a dearth of guidance in doctrine with respect to command and control of combined forces in OOTW. Equally absent is a framework for

building a force structure based on the planner's assessment of the factors and considerations outlined in joint and Army doctrine.¹⁰

The organizational considerations contained in Joint Pub 3-0, Doctrine for Unified and Joint Operations (Test), are founded in the economic and political cohesion of nations within an alliance or coalition, the threat, the composition of friendly forces, and the type of operations the combined force must conduct. The commander establishes command relationships and assigns authority to subordinates based on the operational situation, the complexity of the mission and the degree of control needed to ensure that strategic intent is satisfied.¹¹ The combat focus of the manual is apparent through its stipulation that commanders "should use centralized planning while establishing procedures and techniques for decentralized execution."¹² This advice may be wholly inappropriate to combined forces conducting operations other than war where centralized control and planning may be necessary.

The organizational options that JPUB 3-0 provides are generally applicable to the combined force in OOTW. A combined force commander may choose to organize his forces on an area or functional basis, or a combination of the two. However, the justification for choosing one option over the other seems to abandon the concept of seeking force efficiency through economies of scale.¹³

Joint Publication 3-56, Command and Control Doctrine for Joint Operations (Initial Draft), is equally ambiguous as a source of definitive guidance for structuring combined forces for operations other than war. The manual

primarily describes overarching command and control guidelines, provides descriptions of typical joint force command and control agencies, and incorporates joint service command and control doctrine into a single-source document. It does not, however, describe how to layer into the joint command the various agencies and staffs it describes. Like AFSC PUB 2, this manual emphasizes the point that successful mission accomplishment depends on the establishment of an effective command and control process. The guidelines it provides to achieve efficiency stress the importance of a clear-cut operational chain of command, the need for effective span of control of forces and the arrangement of continuous coordination with adjacent, supporting and subordinate organizations.¹⁴

The manual mirrors JPUB 3-0 in its emphasis of centralized planning and decentralized execution of tasks, although it does stipulate that the commander should consider taking local control of forces if warranted by the situation. Delegation of decisionmaking authority is typically down to the lowest level commander who is competent enough and has the functional means by which to exercise it. Task planning responsibility rests with the commander responsible for its execution.¹⁵ The guidelines cited provide broad direction for determining command and control of forces, but little in the way of detail on how to develop the structure of the organization.

The set of Army field manuals are much like the joint manuals in scope and detail. Field Manual 100-5, Operations, emphasizes the importance of common attributes among combined force partners as a means to reduce friction among

them. Thus, it cites the importance of assessing the commonalities existent in the following considerations when planning and conducting combined operations: military doctrine and training, equipment, cultures, language, and teamwork and trust.¹⁶

The manual briefly touches upon the importance of coordinating and controlling mechanisms, such as liaison teams and standardized procedures, as a means to overcome uncertainty caused by the differences in the above considerations. However, FM 100-5 reiterates the U.S. principle of retaining command of its own forces, ceding only operational command (OPCON) to a combined force commander.¹⁷ This principle may arguably detract from achieving economies of scale in a combined force. Observations from Operation Provide Comfort and the UN mission in Macedonia, however, seem to indicate that the flexibility and cooperative attitude of US forces and leadership can overcome the potential friction in this mandate.¹⁸ Field Manual 100-5 only provides insights into planning and conducting combined operations, none of which seem to be specifically directed at operations other than war. These insights are covered in more depth in Field Manual 100-8, Combined Army Operations (Preliminary Draft).

Field Manual 100-8 also provides broad guidelines for organizing combined forces. It specifies factors that can affect combined operations while listing some general methods through which the commander of a combined force can establish rapport, mutual respect and unity of effort.¹⁹ In-depth discussion of

the conditions that mandate either a parallel, integrated or unilateral command structure provides relatively good guidance for the planner who must develop a force structure at the highest command and staff level. While the manual states that no single command structure best fits the needs of all coalitions or alliances, it seems anchored in a combat operations, large unit-perspective.²⁰ Much of the information in the manual is useful for determining staff structure, however, it offers little in the way of a methodology for developing a force structure for operations other than war.

Field Manual 100-23, Peace Operations (Draft, Version 6), devotes an entire chapter to command and control of peace operations. However, the discussion of combined force structure is heavily influenced by FMs 100-5 and 100-8. Field Manual 100-23 provides perspective on UN operations and their impact on US logistics and operational control of assigned units. It also mentions the need for the force headquarters to conduct interagency coordination through command and control arrangements "based on the individual situation."²¹ The manual fails to specify the type of coordinating and controlling mechanisms that the forces within the combined command might use to effect interagency coordination. Additionally, the perspective of the manual's discussion concerning interagency coordination with U.S. governmental agencies and departments is based on the assumption that the combined commander is an American. Thus, it does little to address the way in which a UN lead and commanded combined force would coordinate with U.S. governmental agencies. Discussion in chapter 3 of the

manual of the type of coordination that a combined force can conduct with nongovernmental organizations (NGOS) and private volunteer organizations (PVOs) is too general to be of much use to a planner.²²

This excursion through joint and Army doctrine serves to show the ambiguity and generality in command and control doctrine for combined forces in operations other than war. The manuals appear to focus their guidelines and factors on combat operations involving large forces from each nation in the combined force. There are some very good principles that the combined force commander and planner should keep in mind as they attempt to organize the force for efficient execution of its tasks. However, they do little to assist the commander in structuring the type of complex forces that the UN is currently fielding to places like Somalia, Cambodia, and Bosnia. Thus, there is a need for a methodology that the commander and his planners can use to assist them in developing an organizational structure for the type of missions the force will be required to accomplish.

III. A COMMAND AND CONTROL DESIGN METHODOLOGY

The review of command and control doctrine for combined operations illuminates the potential need for a methodology to which the commander can refer when structuring a force for operations other than war. Rather than relying entirely on ambiguous and subjective guidelines contained in the doctrine, the commander may find of use a methodology for structuring his forces that is predicated on organizational theory. The methodology presented in this section is useful to the commander and his planners in two ways. First, it enables them to identify and analyze certain variables so that they can make consistent, valid predictions of what kind of organizational structures are effective in different situations.²³ Secondly, it magnifies their understanding of the implications associated with organizational structures in terms of their required resources, complexity, and capacity for reducing uncertainty. Thus, the commander armed with a methodology for organizational structuring can then make better use of his limited resources in their application to certain tasks.

Organizational theory defines an organization as a "system of coordinated activities of a group of people working together toward a common goal under authority and leadership."²⁴ Organizations are open social systems that deal with task-related uncertainty. Uncertainty, the difference between information possessed and information required to complete a task, has sources that are internal and external to an organization. Uncertainty internal to an organization emanates from the requirement for subunits to deal with problem solving and

coordination problems associated with different, sometimes mutually-dependent tasks. The organization's dependence on inputs from a larger, potentially unstable environment makes it susceptible to environmental-based, or external, uncertainty.²⁵

A commander, therefore, should structure his force in order to minimize uncertainty. He and his staff do so by assessing the degree of task-related uncertainty to which his organization is exposed, and then creating the most appropriate subunits, and linkages between these units, capable of facilitating the collection, processing, and distribution of information. The linkages are structural mechanisms that facilitate effective coordination among different yet inter-dependent units within the organization.²⁶ Thus, organizational structure must enable the collection of information from areas external to the organization as well as permit effective processing of information within and between subunits which make up the organization.

The design or structure of an organization is normally understood to include the basic framework of subunits within the organization and the relations or linkages between them. The subunits within the structure receive tasks and responsibilities essential to the accomplishment of the organization's mission. The organization's structure contains systems, or coordinating and controlling mechanisms, that ensure effective communication between subunits and integrates their efforts. The structure of the organization therefore embodies a particular

distribution of control and responsibilities, as well as a degree of cooperation between its subunits.²⁷

The structure of an organization can both assist and hinder a force as it attempts to attain its objectives. Efficient organizational structure contributes to execution of a plan by allocating forces to required tasks, and by providing means for their coordination. A structure's operating mechanisms can also indicate to subunits of the organization more clearly what is expected of them. Standard operating procedures and rules of engagement are indicative of a structure's operating mechanisms. The structure is also the conduit for decision making by virtue of the collection, processing and communication of data and information throughout and among its subunits.²⁸

Conversely, deficiencies in the structure of an organization can have serious consequences for a commander. The lack of sufficient information going to the right user, or the untimely flow of information throughout the organization, can lead to delayed or poor quality decision making. Lack of coordination among the subunits in the force can result in a breakdown between planning and operations, conflicting goals not amalgamated into a single set of objectives and priorities, and a lack of synchronized task execution. Lastly, the failure to establish positions that forecast and scan the external environment can lead to poor response to changing circumstances.²⁹ Thus, it is imperative that a commander and his planners understand the basis for structuring the force. To take this requirement lightly welcomes inefficiency and poor execution into the organization.

Before the commander can structure his force to achieve the efficiencies of sound organization, he must first analyze and assess the degree of uncertainty associated with the tasks for which his subunits are responsible. The commander establishes his analysis on two key propositions: the tasks of the organization's subunits vary in their degree of uncertainty; and, the nature of the subunits' work to accomplish their tasks will determine the amount of uncertainty with which they must deal.³⁰ Thus, the commander and his planners must understand the sources of task-related uncertainty before they can begin to structure the organization. Once they assess the degree of uncertainty associated with the organization's tasks, they can then determine the coordinating and controlling mechanisms necessary for the respective information processing requirements.

Figure 1 depicts the four sources of task-related uncertainty and their relationship to the coordinating and controlling mechanisms that the commander must utilize to maintain an appropriate level of information processing within the force. The four sources of uncertainty impacting on the organization are: task characteristics, inter-unit task interdependence, technology, and the task environment.³¹ Each source contributes to overall task uncertainty and the relative degree of information processing required in the organization. The characteristics of a task often determine the amount of uncertainty associated with the task during its execution. Task complexity and task interdependence are elements of task-related uncertainty. Each characteristic affects the information processing requirements of the task.

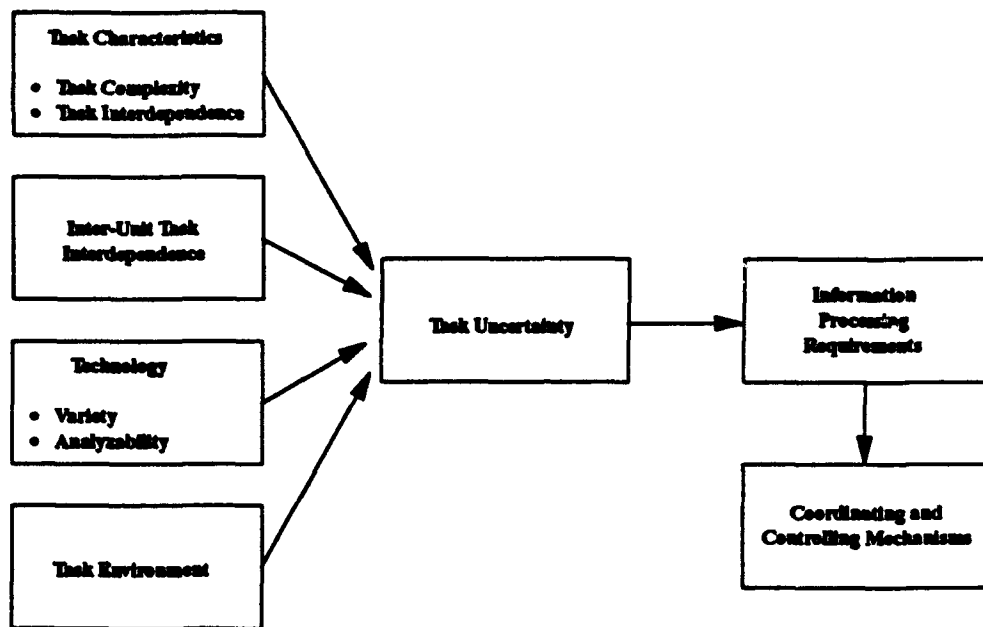


Figure 1. Sources of Task Uncertainty and Their Relationship to Coordinating and Controlling Mechanisms

Task complexity varies on a continuous scale between routine and complex. Routine tasks are those that the commander and his planners can preplan or address through standard operating procedures (SOPs). Because the uncertainty associated with a routine task is small, the information processing requirements are minimal. Complex tasks are those which are not well understood or are too complicated to address in a SOP. Complex tasks require substantial information processing requirements to deal with the increased amount of task-related uncertainty.³²

Task interdependence is a function of the number of corresponding subtasks required to accomplish one task. As the number of subtasks required to accomplish a task increases, so does uncertainty and its associated information

processing requirements. Singular tasks, or those that consist of only a few subtasks, require minimal information processing requirements.³³

Inter-unit task interdependence is the extent to which elements of the organization depend upon each other to accomplish their respective tasks. This interdependence creates a source of task uncertainty that has even broader implications on information processing structure than task characteristics.

Subunits that operate autonomously have fewer requirements to coordinate their activities with other elements of the organization. Consequently, they rely very little on inter-unit task interdependence to accomplish their mission, and therefore, experience less task-related uncertainty. When inter-unit task interdependence is high, the need for frequent adjustments and coordination among all subunits involved increases the amount of task-related uncertainty.³⁴ Thus, an organization with high inter-unit task interdependence requires structural linkages for mutual adjustment among its subunits.

A third source of task-related uncertainty is *technology*. In organizational theory, technology is defined as the "tools, techniques, and actions used to transform organizational inputs to outputs."³⁵ Organizational inputs for the combined force include, but are not limited to: orders or intent from a superior commander, intelligence information from sources outside the force, rules of engagement, SOPs, and mission goals. The output that the combined force commander desires is the ability to accomplish the tasks for which it is responsible. Technology serves as the means by which task inputs are synthesized in order to

achieve an output. The impact of technology on the input-output relationship significantly affects organizational structure and the information processing required to accomplish a task.

There are two underlying elements of technology that effect organizational structure for information processing: task variety and task analyzability. *Task variety* is the frequency of unexpected events that occur during the input-output process, in the technological process.³⁶ Low variety equates to few problems in the process of converting organizational inputs to outputs. High task variety means that the commander and his staff cannot adequately predict problems or activities in advance. Tasks that contain a high degree of variety are high in uncertainty due to the number of unforeseen problems that arise during the technological process. High variety requires structural coordinating and controlling mechanisms within the force in order to deal with the frequency of changes that occur during the technological process.³⁷

The second element of technology that contributes to task-related uncertainty is *task analyzability*. Task analyzability is the ability to reduce tasks to mechanical steps that subunits can follow to solve problems. A task that is analyzable lends itself to objective, computational problem solving. A task that is not analyzable creates problems for the commander and his staff in developing exact procedures that sufficiently accomplish the task. In this instance, the commander relies more on judgment and experience to accomplish the task.³⁸ Subunits that must accomplish tasks that are not analyzable require the frequent

guidance of higher-level decision makers. Conversely, subunits that must accomplish analyzable tasks may rely primarily on SOPs and training as the means of execution.

The *task environment* is the fourth source of task-related uncertainty. The task environment is a source of uncertainty because it consists of those areas or events that can affect the combined force's subunits as they attempt to execute their tasks. Thus, the commander must establish a structure that can effectively learn about and interpret factors that are not directly under his control and are therefore potentially unstable.³⁹ The task environment can be stable or dynamic, depending on how much or how fast it changes from one existing state to another. Additionally, a hostile enemy can affect the task environment and create uncertainty that the commander and his planners must consider.

A *stable* environment enables the combined force and its subunits to adequately plan or develop SOPs in order to deal with the task-related environment. A stable, unchanging environment creates less incentive to gather information because uncertainty is low.⁴⁰ An environment that is rapidly changing requires that combined force to gather more information about the environment. In a *dynamic*, changing environment the force's SOPs are not able to effectively deal with the amount of environmental uncertainty. The force and its subunits must gather and process increased amount of information to deal with the associated uncertainty.

A *hostile* environment is one in which opposing factions actively deter the force from accomplishing its mission. The degree of hostility varies on a continuing scale from passive to very active. A hostile environment mandates significantly more time and assets to reduce uncertainty and process information. An active opposition creates hostility, and thus uncertainty, in the environment by attempting to disrupt the combined force's operations.⁴¹ Disruptions can be in the form of changes to the shape of the environment, such as the destruction of key bridges on roads that humanitarian relief convoys use, or factions actively opposing the combined force's efforts in the area of operations. A force in a stable, noncompetitive environment has less need to gather data because uncertainty is low.

Figure 1 illustrates the four sources of task-related uncertainty which combine to influence the degree of information processing that an organization must possess. As a task becomes more complex or interdependent, the task environment more dynamic or hostile, the technology higher in variety and less analyzable, and as the inter-unit task interdependence increases, the commander must structure the force accordingly in order to contend with increased amounts of uncertainty.

Once the commander and his planners have assessed the degree of uncertainty in the tasks that the force must accomplish, they then structure the force according to the level of required information processing. Organization theory provides the commander three ways that he may use to structure his

subunits: organismic, mechanistic, or a combination of the two.⁴² *Organismic* subunit structure relies on the hierarchical decentralization of authority for the execution of tasks. The structure typically deals with multiple tasks that have a high degree of task-related uncertainty. Thus, organismic structures generally warrant a significant amount of peer involvement in task-related decision making. Organismic structures are less formal and rely minimally on SOPs for task execution.⁴³ This type of structure is similar to that of an area command organization described in JPUB 3-0 in that the structure is usually hierarchical, and it relies on the integration and cooperation of various dissimilar forces in the area to execute tasks.

Mechanistic subunit structures differ from organismic structures by virtue of their reliance on procedure and standardization for execution of tasks. Mechanistic structures are unable to deal effectively with large amounts of uncertainty. These structures are better suited for tasks and environments where the requirement for information processing is minimal.⁴⁴ A functional command organization is very mechanistic in that it centralizes the execution of specialized tasks around functionally similar subunits. The number of interdependent tasks is typically limited to those for which the subunit is designed. Lastly, the subunits' familiarity with these tasks establishes a foundation for standardization of task execution.

The commander can organize his force using a combination of these two subunit structures. He does so by determining those tasks that are most applicable

to each particular structure based on the level of uncertainty associated with the tasks and the information processing required for their execution.⁴⁵ Thus, the commander associates tasks that lend themselves to functional execution and procedural standardization with subunits that are mechanistic by design. The commander may also determine that some of his mission tasks are best executed by subunits that can work together efficiently and with very little need for standardization or command direction. However, to achieve efficiency of the composite force the commander must use mechanisms that will link its efforts together.

Upon assessing the degree of task-related uncertainty that the force must deal with and the structure of the subunits that will execute the force's mission tasks, the commander must link the subunits together into a cohesive, whole unit. He does so by using mechanisms for coordination and control. Organization theory recognizes three such mechanisms: the *standardization* of procedures that lead to task execution; the *direct supervision* of subunits in their tasks; and, the *mutual adjustment* of two or more cooperating subunits to the actions of each as they accomplish their assigned portion of the task(s).⁴⁶ These mechanisms serve as enablers for subunit task execution and are based on the degree of information processing relative to the tasks.

Each coordinating and controlling mechanism is suited for a certain level of task-related uncertainty and information processing capacity. *Standardization* is the creation of routines that are always applied to solving problems and producing

products in accomplishing a mission. Standardization is the best means of coordination the efforts of subunits in an organization's structure for those tasks that require low inter-unit task interdependence, are associated with a stable environment, are easy to identify, and are simple and conform to prescribed actions.⁴⁷ Standardization is analogous to what U.S. Army Field Manual 101-5, Command and Control for Commanders and Staff (Final Draft), describes as "procedural control."⁴⁸

Direct supervision is essentially the giving of orders. Direct supervision creates coordination and control by internalizing the set of tasks to be coordinated in one person. Direct supervision imposes checks and limits on the discretion that subordinates can use by narrowing the subordinate's span of control.⁴⁹ As a coordinating and controlling mechanism, direct supervision is best suited to those cases where the subunits lack the necessary skills to accomplish their tasks because task identification is difficult, task accomplishment is complex, and the task environment is dynamic. Consequently, direct supervision is uniform with FM 101-5's description of "positive control."⁵⁰

Mutual adjustment is typically the method of coordinating a number of subunits in which two or more of their decision makers mutually solve problems and implement solutions.⁵¹ Mutual adjustment is well suited to tasks with a high degree of inter-unit task interdependence. The commander who intends to use this means for coordinating the execution of the force's tasks must ensure that the

training and competence of his subordinate decision makers is high and that they are supplied with a large amount of relevant, timely information.

The commander must realize that each coordinating and controlling mechanism varies in terms of information processing capacity, and that there are costs associated with each mechanism. Figure 2 illustrates the relationship between each mechanism's information processing capacity and their respective complexity and resource requirements. In general, the greater the capacity to process information, the more complex and comprehensive the mechanism. Increased complexity and processing capacity create a structure that is more costly in terms of time, energy, resources, and supervisory control.⁵² Too much information processing capacity leads to high costs and redundancy, while too little capacity does not adequately reduce uncertainty. It is up to the commander and his staff to determine the correct balance of capacity, complexity and cost when structuring the force.

Mechanism	Information Processing Capacity	Complexity	Resources Required
Standardization	Low	Simple	Few
Direct Supervision	↓	↓	↓
Mutual Adjustment	High	Complex	Many

Figure 2. Mechanisms for Coordination and Control

Organizations are more effective and efficient when there is a corresponding match between the information processing requirements they face

from task-related uncertainty and the processing capacity of the organization's structure. Achieving equilibrium between uncertainty and information processing requirements is the essence of organization theory. The methodology presented in this section provides a commander of a combined force with a process that can assist him as he determines how to best configure the myriad of subunits assigned to the force.

The methodology is essentially a three-step process. The commander of a force first makes his choice of subunit structure by first assessing the degree of task-related uncertainty with respect to its sources. He then structures subunits along organismic or mechanistic lines according to the information processing requirements that emanate from the task analysis. The final step in this methodology is to insert coordinating and controlling mechanisms that help achieve unity of effort where it is required. The figure in Appendix A shows the relationship of task uncertainty, information processing requirements, and coordinating and controlling mechanisms in tabular format.

It remains to be seen if the methodology is appropriate for structuring of a combined force for operations other than war. That question is the subject of the next section's case study: Operation Provide Comfort.

IV. METHODOLOGY APPLICATION: OPERATION PROVIDE COMFORT

From the time that he receives his mission to the redeployment of the last soldier, the commander of a combined force faces the daunting task of determining the composition and structure of the force. This task is not one that he and his planners complete at the beginning of the mission: it is a responsibility that continues throughout the execution of the mission as both mission-related tasks and task environment change. Thus, the commander requires a means through which he can assess the nature of his force's mission and the adequacy of the force's structure to execute the tasks that evolve from the mission. The methodology presented in the previous section may provide such a means.

This section of the monograph examines the utility of the methodology as a tool for determining the basic force structure for combined forces in operations other than war. The examination revolves around a recent, defining operation other than war: Operation Provide Comfort. The monograph analyzes the primary mission-related tasks of the operation with respect to its sources of uncertainty, followed by an assessment of the type of subunit structures and coordinating and controlling mechanisms necessary to deal with the operation's task-related uncertainty. A comparison of the hypothetical structure with the actual force structure used during Operation Provide Comfort may provide insight as to the feasibility of the methodology as a supplement to a generally weak and ambiguous doctrine.

Before embarking on the application of the methodology to each operation, it is useful to illuminate the general nature of operations other than war.

Operations other than war (OOTW) will often take place in environments less well defined than in combat. A military commander must understand and appreciate the fact that these types of operations will not be shaped primarily by military technology or direct application of massed military power. Instead, OOTW are forged by the political and sociological dynamics of the situation.⁵³

Operations other than war occur in an environmental spectrum ranging between peacetime and conflict. Within this range, military forces may provide support for protection and delivery of humanitarian relief, can act as observers and monitors of cease fires between warring factions, or may be tasked to apply limited military, paramilitary or nonmilitary force in support of diplomatic peacemaking operations.⁵⁴ The mandate for action and its relative tasks may be ambiguous and extremely volatile. Actions at the tactical level may often have immediate strategic and political implications in this environment.⁵⁵ The identity of belligerents may be less clear in OOTW than in traditional combat: irregulars, armed bandits, and even local populations can introduce danger and friction into an OOTW. A wide range of national and international organizations, including nongovernmental organizations (NGOs) and private volunteer organizations (PVOs), will be in the area of operations during OOTW. There is also a linkage between combatants and noncombatants in OOTW that amplifies the political and cultural dimensions of an operation.⁵⁶

Thus, it is not unrealistic to accept the fact that other government agencies may often have the lead for an OOTW. In this environment, the commander seeks to establish a command structure that takes account of, and provides coherence to, the activities of all elements in the area of operations. The command structure is borne from military, political, civil, humanitarian, and administrative activities involved in the OOTW. The commander must consider how his force's actions contribute to diplomatic, economic and informational initiatives. He must account for the mutual interdependence of his force's mission tasks with those of other agencies and ensure that the force structure links their efforts so as to achieve unity of effort. Creating this cooperative structure will require extensive liaison with all involved parties.⁵⁷ The above observations are evident in the following case study.

OPERATION PROVIDE COMFORT

On 5 April, 1991 President Bush announced that the U.S. military would provide humanitarian assistance to ease the suffering of the Kurds who had fled to the Turkish-Iraqi mountains in the aftermath of the Kurdish nationalist uprising in Iraq. This unilateral action was soon superseded by a coalition effort that was unique with respect to the teamwork demonstrated among the coalition military forces as well as its civil-military cooperation.⁵⁸ During April and May 1991, over 31,000 soldiers, sailors and airmen deployed from 13 nations to support a single, coordinated humanitarian effort that would come to be known as "Operation Provide Comfort." The establishment of Combined Task Force-Provide Comfort

(CTF-PC) and the integration of multinational forces into the coalition took place on 16 April, 1991. The mission to provide humanitarian assistance to the Kurds and the coalition partners' political agenda formed the command and control (C²) structure of CTF-PC.⁵⁹ The following application of the command and control design methodology illustrates what the top-level force structure of CTF-PC might have looked like based on analysis of its primary tasks.

The CTF-PC coalition military forces were responsible for executing two primary tasks: provide humanitarian relief to the Kurds, eventually turning the mission over to the United Nations and other civilian relief organizations; and, provide security in the area of operations for the relief effort as well as during the repatriation of the Kurds to their homes in northern Iraq.⁶⁰ Both of these task's characteristics contained a high degree of task-related uncertainty due to their complexity and interdependence.

The CTF's primary tasks were complex, ranging from forging political agreements to conducting multinational operations at the tactical level.⁶¹ The lack of detailed and in-depth doctrine for refugee operations that delineates planning factors, responsibilities and methods to the commander and his staff contributed to task complexity.⁶² Additionally, the task of transferring the displaced Kurds from Turkey to the security zone in northern Iraq would prove complicated by its bearing on both the political and military dimensions of the operation.⁶³

Task-related uncertainty was also a product of the significant number of corresponding subtasks contained within the two primary tasks: their task

interdependence. In addition to the military-related tasks required to ensure security of the coalition forces and the Kurdish refugees in the area of operations, there were many civil affairs, medical, and psychological operations subtasks that coalition forces had to execute to accomplish the mission.⁶⁴ The extensive depth of the tasks, from tactical to strategic, required to perform the two primary tasks of CTF-PC increased task uncertainty and thus the information processing requirements needed to coordinate the execution of the tasks.

The dependence of CTF forces upon each other, and organizations external to the CTF, to accomplish their respective tasks also created a high degree of task-related uncertainty. Political sensitivity and the reliance of the CTF on Turkey as a host nation for facilities and equipment required the CTF to work closely with the Turkish government and the Turkish General Staff.⁶⁵

Additionally, the need to coordinate CTF operations with NGOs and PVOs in the area of operations, and in some cases benefit from their expertise and capabilities, contributed to inter-unit task interdependence.⁶⁶ There was also a need to establish contact with Iraqi and Kurdish leadership to ensure coordination and clarity of every CTF intention and action.⁶⁷ The presence of air operations in all facets of the CTF tasks, ranging from air cover for security forces to airdrop of relief supplies, was an indicator of inter-unit task interdependence within the CTF.⁶⁸ Application of air assets would require extensive and timely coordination, thereby contributing to uncertainty. Lastly, the need to clear the area in the security zone of mines and potential hostile forces mandated close coordination between humanitarian forces

charged with moving the Kurds back to their homes and security forces responsible for their protection.⁶⁹ Inter-unit task interdependence created a high level of uncertainty during Provide Comfort, and thus a corresponding need for significant information processing capacity.

Technology, the synthesis of task inputs to achieve an output, also contributed significantly to the uncertainty in the CTF's two primary tasks. The dynamic nature of the humanitarian relief and security operations created conditions calling for continuous evaluation and estimation of the situation with rapid adjustment of the CTF's tasks as appropriate.⁷⁰ These conditions required the CTF commander, staff, and respective subordinate units to keep pace with a high frequency of unexpected events as they executed the CTF's primary tasks.⁷¹ Thus, task variety was high due to the number of unforeseen problems arising during task execution.

The unique nature of this kind of multinational, multiorganization operation contributed to the inability of the force's subunits to reduce the two primary tasks to standard, mechanical steps they could use to execute the tasks. Uncertainty from task analyzability was evident from the lack of doctrine that the subunits in CTF-PC could use to guide them in humanitarian relief operations.⁷² The dynamic nature of the mission also required a flexibility that would make some current military procedures and doctrine inadequate to the primary tasks.⁷³ Thus, lack of doctrine, or its inappropriate application to the situations confronted by forces during Provide Comfort, would create significant uncertainty during task

execution. The net result of this high degree of uncertainty would be a reliance by the leaders on their practical judgment and innovation to solve problems as opposed to standard operating procedures.

The hostile nature of the task environment also created a high degree of uncertainty in the CTF-PC's two primary tasks. The security situation in the mountains along the Turkish-Iraqi border was complex and potentially multi-threat. There was the threat of Iraqi military action from its forces in the area, from the Kurdish Peshmerga, and from Iraqi sponsored terrorist groups that may have infiltrated into Turkey. A Turkish terrorist group, Dev Sol, operated in the areas near CTF support bases. This group is feverently anti-American and had been active in the area of operations just prior to the CTF mission.⁷⁴ Additionally, the nature of the mission, humanitarian aid to the Kurds, precluded any opportunity for a comprehensive intelligence collection effort that would provide the CTF with essential information about the task environment.⁷⁵ The dearth of operational and tactical intelligence, especially relative to the Kurds and their leadership, contributed significantly to task-related uncertainty. The lack of intelligence prior to deployment of the CTF's forces and the hostile nature of the task environment would require an information processing capacity within the CTF that would reduce the high degree of uncertainty existent in its primary tasks.

Figure 3 summarizes the task analysis of CTF-PC's primary tasks. The figure indicates that the information processing requirements for this operation are significant and will require a great deal of decentralized decision making in order

to deal effectively with task-related uncertainty. The force's reliance on SOPs to execute tasks will be minimal. The task analysis indicates that the structure of the force will be hierarchical and will require the integration and cooperation of dissimilar forces into subunits to execute the tasks.

Sources of Task-Related Uncertainty	Range	Information Processing Requirements	Coordinating and Controlling Mechanisms
Task Characteristics • Complexity • Interdependence	Complex Many Subtasks	High High	Mutual Adjustment Mutual Adjustment
Inter-Unit Task Interdependence	Extensive	High	Mutual Adjustment
Technology • Variety • Analyzability	Much Little	High High	Mutual Adjustment Direct Supervision
Environment	Hostile	High	Mutual Adjustment

Figure 3. Summary of Analysis for CTF-PC Primary Tasks

The next step in the methodology is the determination of subunit structures in accordance with the task analysis assessment. The three possible subunit structures are organismic, mechanistic or a combination of both. Recalling from organizational theory, it is possible to organize the force using a combination of organismic and mechanistic subunit structures if the commander can associate like tasks with a particular subunit structure.⁷⁶ This possibility exists to some degree with respect to CTF-PC's tasks. First, the task of providing humanitarian relief to the Kurds requires an organismic structure due to the need to establish infrastructure in the refugee camps, to provide humanitarian services (medical, food and equipment), to secure the immediate area from local threats, and to coordinate the movement of the refugees to transit camps.⁷⁷ The subunit

organization (subunit A for ease of reference) would most likely require a mix of civil affairs, PSYOP, transportation, medical, special forces and light infantry units under a common headquarters.⁷⁸

The task of providing security to the area of operations for the relief effort and the repatriation of the Kurds to their homes also requires an organismic subunit structure, although not to the degree as subunit A. This subunit (subunit B) would require a larger contingent of combat forces to provide security against possible Iraqi interference. The structure would also include civil affairs units to help receive refugees and turn the relief operations in the area over to civilian organizations. The subunit might require engineers to help reestablish basic civil works systems that might have been damaged or sabotaged by the Iraqis during their occupation of the area.⁷⁹

Some aspects of CTF-PC's primary tasks are also executable by mechanistic subunit structures. Consolidation of most coalition combat service support units under a mechanistic subunit structure (subunit C) is possible due to the consistent nature of their supporting tasks in any task environment.⁸⁰ The same can be said for the nature of the air operations (subunit D) for Provide Comfort.⁸¹ The tasks forces assigned to these two subunits are relatively functional and specialized despite their complementary role to the CTF's two primary subtasks.

Thus, based on the task analysis the CTF hypothetical structure would contain two organismic subunits, A and B, with subunit A executing the humanitarian relief task and subunit B the security and repatriation task. The CTF

structure would also contain two supporting, mechanistic subunits. Subunit C would be responsible for combat service support functions across the entire force, and subunit D for all air operations.

The last step in the methodology requires the commander to identify coordinating and controlling mechanisms to link the force internally and with organizations external to the force. As figure 3 indicates, the force will require mechanisms that promote mutual adjustment among the subunits and organizations external to the CTF. For instance, it is understood that subunit B in its execution of the security task for the CTF will require air support. Therefore, there must be a mechanism that conducts mutual adjustment between subunit B and subunit D. Mutual adjustment must also exist between subunits A and B and subunit C for the delivery of supplies that A and B require for their own sustainment, and to support A's execution of the humanitarian relief mission. Lastly, there must be mutual adjustment between subunits A and B as they conduct the transfer of the refugees from A's area of operations to the transit camps in subunit B's security area.

There are several requirements for coordination and control with organizations external to the CTF. First, there must be a mechanism that conducts recurring mutual adjustment between the CTF and the NGOs and PVOs in the area of operations. This same organization (subunit E) may be able to conduct mutual adjustment between the CTF and the United Nations relief organizations that are to assume responsibility for the mission when the CTF redeploys. Additionally, as noted earlier, there is a need to coordinate coalition actions with the Turks and the

Iraqis to ensure clarity of intent for CTF actions. Thus, there must be an organization (subunit F) that conducts mutual adjustment between the coalition and the Turks and Iraqis. The commander must keep in mind that the subunits performing these liaison functions will require staffing and equipping, quite possibly leading to a significant increase in the resources required for the mission.

A comparison of the hypothetical force structure based on the methodology and the actual force structure used for CTF-PC shows some similarities and differences between the two (diagrams shown in Appendix B). Subunit A and JTF-A appear similar in composition and intent with respect to their structures for the humanitarian relief task. Like subunit A, JTF-A is organismic in that it contains special forces, civil affairs, PSYOP, medical, aviation and light infantry units cooperatively working together to provide humanitarian relief to the Kurds.³² Conversely, JTF-B differs from subunit B in that the former is functionally oriented: it is designed primarily to provide security for JTF-A and the repatriated Kurds. Subunit B is an organismic structure designed for high-capacity information processing and mutual adjustment among its forces. In this case, the noncombat forces provided to the hypothetical structure for task execution in actuality supported JTF-B without being assigned or in a supporting relationship to the task force.³³

Like subunit D the Combined Air Force Command (CAFCOM) of CTF-PC was a mechanistic subunit structure that provided a total package of air capabilities to the forces on a daily basis.³⁴ The CTF attempted to operate on an abbreviated

ATO cycle of 48 hours but this proved too rigid for the dynamic nature of the task and the task environment. This problem was somewhat circumvented by the Air Naval Gunfire Liaison Company (ANGLICO) teams in JTF-B that gave the former a means for requesting near real-time air support.⁸⁵ Thus, the ANGLICO teams served as the mechanism for mutual adjustment with the CAFCOM when the ATO cycle failed to keep pace with the force's information processing requirements.

The Combined Support Command (CSC) provided consolidated coordination and support for the supplies, transportation, labor, and services required by the CTF. Like subunit C in the hypothetical structure, the mechanistic nature of CSC was appropriate to the tasks that it had to perform in order to support the force. Mutual adjustment between CSC and the JTFs served as the coordinating mechanism that enabled the force to accomplish its tasks in short order and under difficult conditions.⁸⁶

The hypothetical structure and the actual structure are similar in that both recognize the need to conduct extensive mutual adjustment with organizations external to the CTF. Like subunit F in the hypothetical structure, CTF-PC established a Military Coordination Center (MCC) that could convey clear instructions and intentions Iraqi forces and Kurdish political and tribal factions.⁸⁷ Subunit E also has a counterpart in the actual structure. The Civil Affairs Command (CAC) of CTF-PC coordinated the force's humanitarian functions with NGOs and PVOs and had oversight for the transition of the mission to the UN High Commissioner for Refugees.⁸⁸ The major difference between the two

structures lies in the presence of a Medical Command in the actual CTF. This command was responsible for the centralized planning of military medical operations and the coordination of these operations with its civilian counterparts. The hypothetical structure assigned medical forces to the subunits responsible for execution of the primary tasks (subunits A and B).³⁹ Both the MCC and the CAC served as the means for coordinating execution of CTF-PC's primary tasks with external organizations that it relied upon for accomplishing the mission.

The analysis of the similarity between the hypothetical and actual structures for CTF-PC shows that the proposed methodology may be useful as a tool for structuring a force in OOTW. In this case study the hypothetical structure approximates the actual top-level structure of CTF-PC. The use of organismic and mechanistic subunit structures is a near match with one exception. Additionally, the methodology recognized the need to include several subunits that could act as means for coordinating execution of the CTF's tasks with organizations external to the CTF. The methodology also identified the need for coordination among the CTF's subunits. Therefore, the methodology's utility to the commander lies in its ability to provide him with a well-founded, initial force structure for his mission. The methodology also enables him to assess the cost in resources required as they relate to the types of coordinating and controlling mechanisms that are inherent in the force structure.

V. CONCLUSIONS

The intent of this paper is not to refute the doctrinal publications cited in Section II as relevant and useful references for the combined force commander as he labors over the organization of his force for an operation other than war. On the contrary, collectively the manuals provide many practical and historically proven guidelines and considerations that are useful when structuring forces for combined operations. This paper, however, demonstrates the need for a methodology that can serve as a first step in the process of building a combined force structure.

The methodology in this monograph presents an approach founded upon the need to build an organization around the *nature* of the primary tasks for which it is responsible. This need is obvious to the military commander and planner. Joint Publication 3-0, Doctrine for Unified and Joint Operations, cites the tasks of a combatant command as one of the primary considerations for its organizational structure. The manual goes on to state that the commander may organize the force on an area basis, functional basis or a combination of the two. The manual also lists several characteristics of an organization structured on an area or functional basis. The most significant characteristics listed in the manual are the need for centralized control of certain military functions or their integration within a geographic area, and the level of the commander's directive authority over the forces within his command.⁹⁰ What is not discussed in the manual are the underlying reasons for choosing centralized or decentralized integration of

functions, or the appropriate degree of coordinating and controlling authority for the subunits within the force that will execute the organization's primary tasks.

methodology in Section III provides a theoretical basis for making such choices.

The methodology gives the commander and planner a means by which they can analyze the often complex tasks of an operation other than war. Based on the uncertainty relative to the organization's tasks, the methodology enables the commander to assess the type of subunit structures that he will need to execute the tasks. A commander can also use the degree of task-related uncertainty to predict the types of coordinating and controlling mechanisms necessary to link the combined force's subunits with one another, and with organizations external to the force. Lastly, the commander can use the methodology to survey the complexity of the force structure's coordinating and controlling mechanisms. The commander may use this assessment to make a more informed judgment of the cost in resources required for controlling the force. Thus, he can determine early in the mission analysis process the force's comparative level of resource intensive liaison devices, and request the support necessary to establish them within the force structure.⁹¹

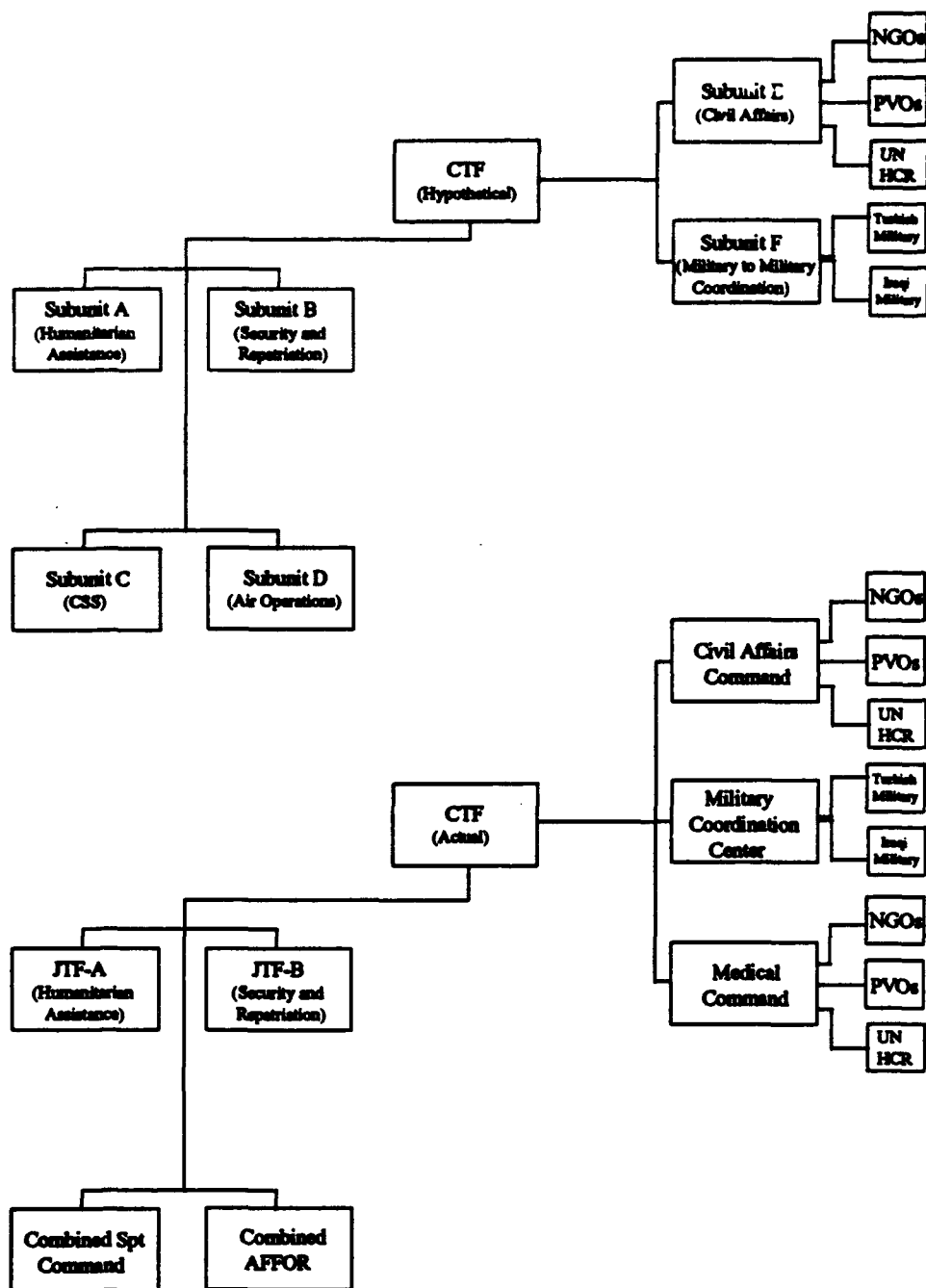
It would be naive to assume that this methodology can provide a definitive structure for a combined force in an OOTW. The commander must also rely on his best judgment to assess the compatibility of contributed forces within the force structure provided by the methodology. For the basis of his judgment, the

commander can refer to the doctrinal guidelines contained in publications such as field manuals 100-5, 100-8 and 100-23, as well as his own personal experience as a seasoned, senior military commander. The commander must often placate the political agenda of the nations contributing forces to the mission, and thereby customize the force structure based on these agenda. He will recognize the limitations imposed on the force structure by technical, cultural, and language differences among the combined force's partners. He will often, however, be able to offset these barriers through the professionalism of his subordinate leaders and their personal relationships forged by a common purpose. Nevertheless, the methodology provided in this monograph can give the commander of a combined force a tool by which he can initially develop his force structure. It will give him a foundation from which to build his organization and integrate the wide array of forces he can expect to have under his control.

Appendix A: Relationship of Sources of Task-Related Uncertainty, Information Processing Requirements, and Coordinating and Controlling Mechanisms

Sources of Task-Related Uncertainty	Range	Information Processing Requirements	Coordinating and Controlling Mechanisms
Task Characteristics • Complexity • Interdependence	Simple ↓ Complex Few Subtasks ↓ Many Subtasks	Low ↓ High Low ↓ High	Standardization ↓ Mutual Adjustment Standardization ↓ Mutual Adjustment
Inter-Unit Task Interdependence	Low ↓ High	Low ↓ High	Standardization or Direct Supervision Mutual Adjustment
Technology • Variety • Analyzability	Little ↓ Much Yes ↓ No	Low ↓ High Low ↓ High	Standardization or Direct Supervision Mutual Adjustment Standardization ↓ Direct Supervision
Environment	Stable Dynamic Hostile	Low Medium High	Standardization Direct Supervision Mutual Adjustment

Appendix B: Hypothetical and Actual Top-Level Structures for Combined Task Force Provide Comfort



ENDNOTES

¹ U.S. Army, Field Manual 100-5, Operations (Washington, DC: Department of the Army, June 1993), pp. 2-0 to 2-1. U.S. Army Field Manual 100-5 (Operations) classifies its activities during peacetime and conflict as *operations other than war* (OOTW). The military's goal during conflict is to deter war and resolve discord. The environment during conflict can be intense, especially when the U.S. uses the military to achieve its aims. Peace enforcement, antiterrorism, and peacekeeping are a few examples of OOTW during conflict. During peacetime, the U.S. uses forces to deter enemy action and promote peace. Military operations during peacetime are relatively benign as they serve as a deterrent or, if necessary, to compel acquiescence. Military operations during peacetime include: counterdrug operations and support, disaster relief, civil support, peace building, and nation assistance.

² U.S. Army, Field Manual 100-23, Peace Operations (Draft - Version 6) (Washington, DC: Department of the Army, January 1994), pp. iv-v. Five of the 13 UN peacekeeping operations initiated between 1948 and 1978 continue to this day.

³ U.S. Congress, Senate, Committee on Foreign Relations, Letter of Transmittal from Staff of the Committee on Foreign Relations to the Committee Chairman, Subject: United Nations Peacekeeping Operations and Implications for United States Policy (Washington, DC: 6 August 1993), p. ix.

⁴ For example, the UN Transitional Authority in Cambodia (UNTAC) has approximately 16,000 soldiers fielded in twelve infantry battalions representing eleven countries. As of 14 February 1994, the UN Protection Force (UNPROFOR) in the former Yugoslavia contains 28,291 soldiers from 34 different nations. Additionally, there are 585 UN observers in the former Yugoslavia not affiliated with UNPROFOR, as well as civilian police augmentees and numerous nongovernmental organizations and private volunteer organizations.

⁵ FM 100-23, pp. v and vi.

⁶ Major Barry A. Maxwell, "Establishing Theater Command and Control in a Coalition of Nations: Requirements for US Doctrine" (Fort Leavenworth, KS: U.S. Army Command and General Staff College, School of Advanced Military Studies Monograph, May 1992), pp. 24, 41, 43.

⁷ Michael L. Tushman and David A. Nadler, "Information Processing as an Integrating Concept in Organizational Design," Academy of Management Review 3 (1978), p. 615.

⁸ Department of Defense, National Defense University, Armed Forces Staff College, AFSC Pub 2, Service Warfighting Philosophy and Synchronization of Joint Forces (Norfolk, VA: August 1992), p. II-5-A-3.

⁹ Ibid., pp. II-5-A-1 to II-5-A-2.

¹⁰ In his monograph, "Establishing Theater Command and Control in a Coalition of Nations: Requirements for US Doctrine," Major Maxwell provides a framework based on his analysis of applicable doctrinal guidelines. His "Spectrum of Similarity Model" subjectively assesses the similarity of a coalition partner and then uses this as the basis for the type of coalition C² structure, the extent of the "translation mechanism" needed, and the depth and level of the liaison effort required within the structure. The model might give a planner an initial assessment of what the structure might look like at a very high force level. However, it seems to lack validity when faced with a coalition structure of many nations. See pages 39-41 in Maxwell's monograph for a discussion of the Spectrum of Similarity Model.

¹¹ Department of Defense, The Joint Chiefs of Staff, JCS Pub 3-0, Doctrine for Unified and Joint Operations (Test) (Washington, DC: January 1990), p. III-5

¹² Ibid.

¹³ Ibid., p. IV-5. The discussion in the manual transitions from a concept of organizing to achieve efficient use of all forces provided by separate nations to one that emphasizes organization for convenient control of the force. The manual states that for the sake of simplicity the commander should organize his forces according to national areas of operation, or on a functional basis depending on size of the forces contributed by individual partners.

¹⁴ Department of Defense, The Joint Chiefs of Staff, JCS Pub 3-56, Command and Control Doctrine for Joint Operations (Initial Draft) (Washington, DC: September 1992), p. A-1 to A-2.

¹⁵ Ibid.

¹⁶ FM 100-5, pp. 5-2 to 5-3.

¹⁷ Ibid., p. 5-3.

¹⁸ LTC Gordon W. Rudd, "Operation Provide Comfort" (West Point, NY: USMA, no date), pp. 38-39. Additionally, bullet comments in the JTF Bravo Provide Comfort update briefing from several subordinate force commanders emphasize the cooperative attitude of the US leadership and forces subordinated to commanders of other national subelements of JTF Bravo. Conclusions concerning the cooperation of US forces with the UNPROFOR Former Yugoslavia Republic of Macedonia (FYROM) headquarters (not a US command) are based on an interview with CPT Robert Burns, US Army. CPT Burns served as an observer with the Berlin Brigade when it was deployed under the TACON of FYROM.

¹⁹ U.S. Army, Field Manual 100-8, Combined Army Operations (Preliminary Draft) (Fort Monroe, VA: HQ TRADOC, January 1992). On pages 2-15 to 2-16 the manual cites the importance of national political agendas and the need for effective liaison between coalition partners as factors affecting combined operations. On pages 3-4 to 3-5 the manual lists the following methods of establishing rapport, mutual respect and unity of effort: visibility of the combined commander; fair and equitable representation of various nations on combined planning staffs; equitable exposure and treatment for all units; overcoming the language barrier, especially through liaison teams; and, consideration of cultural sensitivities.

²⁰ Ibid., p. 2-7. The manual states that OPERATION DESERT STORM "is expected to be the ad hoc coalition force projection model of the future."

²¹ FM 100-23, p. 3-9.

²² See FM 100-23, pp. 3-7 to 3-8. The guidance in the manual for integrating the capabilities of NGOs and PVOs with a military force is two-fold. First, the commander must provide for coordination and cooperation of their efforts through such mechanisms as civil-military cooperation councils (CMOCs). Secondly, the manual states that "these organization (sic) are to be supported where feasible and in compliance with mandate and military objective."

²³ Michael L. Tushman and David A. Nadler, "Information Processing as an Integrating Concept in Organizational Design," Academy of Management Review 3 (1978), p. 613.

²⁴ William L. Scott and Terrence R. Mitchell, Organization Theory (Honewood, IL: Richard D. Irwin, 1976), p. 1.

²⁵ Tushman and Nadler, p. 614.

²⁶ Ibid., p. 615.

²⁷ John Child, Organizations: A Guide to Problems and Practice (London: Harper and Row, 1984), pp. 3-5, 15.

²⁸ Ibid., pp. 4-5.

²⁹ Ibid., pp. 6-7.

³⁰ Tushman and Nadler, p. 615.

³¹ Tushman and Nadler cite three sources of uncertainty: task characteristics, task environment, and inter-unit task interdependence, p. 615. The fourth source, technology, is from Charles Perrow, "A Framework for the Comparative Analysis of Organizations," American Sociological Review 32 (1967), pp. 194-198.

³² Tushman and Nadler, p. 615.

³³ Ibid.

³⁴ Richard L. Daft and Robert H. Lengel, "Organizational Information Requirements, Media Richness and Structural Design," Management Science vol. 32, 5 (May 1986), pp. 564-565.

³⁵ Perrow, p. 194.

³⁶ Ibid., p. 197.

³⁷ Ibid., p. 198.

³⁸ Daft and Lengel, p. 564.

³⁹ Ibid., p. 566.

⁴⁰ Ibid.

⁴¹ Harold L. Wilensky, Organizational Intelligence (New York, NY: Basic Books, 1967), p. 78.

⁴² Tushman and Nadler, pp. 616-617.

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ Ibid., p. 619.

⁴⁶ Child, pp. 146-157.

⁴⁷ Ibid., p. 155.

⁴⁸ U.S. Army, Field Manual 101-5, Command and Control for Commanders and Staffs (Final Draft) (Fort Leavenworth, KS: U.S. Army Command and General Staff College, August 1993), p. 1-19 to 1-20.

⁴⁹ Child, pp. 156-157.

³⁰ Field Manual 101-5, p. 1-19.

³¹ Child, p. 151.

³² Tushman and Nadler, pp. 618-619.

³³ FM 100-23, pp. v and vi.

³⁴ FM 100-5, p. 2-0.

³⁵ FM 100-23, p. 1-8.

³⁶ Ibid., pp. v-vi, 1-1 to 1-2.

³⁷ Ibid., pp. 1-13 to 1-14.

³⁸ Headquarters, U.S. European Command, "Operation Provide Comfort After Action Report - Executive Summary" (no date), p 1. Hereafter cited as EUCOM AAR. Fifty NGO and PVO agencies participated in the relief effort for the Kurds. They often worked side-by-side with military forces, each group gaining a measure of respect and appreciation for the other's roles and capabilities.

³⁹ Donald G. Goff, COL., USA, "Building Coalitions for Humanitarian Operations" Individual Study Project (Carlisle Barracks, PA: U.S. Army War College, 1992), p. 17 and John M. Shalikashvili, LTG, USA, "Statement of LTG John M. Shalikashvili Before the House Armed Services Committee" (Washington, DC: 4 September 1991), p. 5. Hereafter cited as "Shalikashvili, HASC Testimony, 4 Sept 91."

⁴⁰ Shalikashvili, HASC Testimony, 4 Sept 91, p. 27. Also see EUCOM AAR, p. 1.

⁴¹ LTC John P. Cavanaugh, "Operation Provide Comfort: A Model for Future NATO Operations" (Fort Leavenworth, KS: U.S. Army Command and General Staff College, School of Advanced Military Studies Monograph, 1992), p. 35.

⁴² U.S. Army, U.S. Army Combined Arms Command (CAC), Humanitarian Assistance (Operation Provide Comfort) (Fort Leavenworth, KS: Center for Army Lessons Learned, no date), p. 18. Hereafter cited as "CAC Newsletter."

⁴³ Headquarters, U.S. European Command, JULLS Report Number 21049-45804 (00003), 10 January 1992, p. 1.

⁶⁴ Headquarters, U.S. European Command, JULLS Report Number 21409-17995 (00002), 10 January 1992, p. 2 describes the extensive nature of the medical task in the operation. Headquarters, U.S. European Command, Joint Task Force Bravo, After Action Report Briefing, no date, contains in-depth listings of military tasks that its subordinate units conducted during Provide Comfort. The military-related subtasks of the two primary tasks included: reconnaissance and surveillance, fire support control, security operations, medical evacuation, explosive ordnance disposal, tactical airlift of supplies and personnel, convoy operations, equipment maintenance, mine clearing, patrolling, etc.,. CAC Newsletter, pp. 13-15 lists or describes the civil affairs and PSYOP tasks.

⁶⁵ LTC Gordon W. Rudd, "Operation Provide Comfort," unpublished paper written while serving as a member of the faculty at the United States Military Academy, no date, p. 98.

⁶⁶ Shalikashvili, HASC Testimony, 4 Sept 91, p. 6. There were 50 NGOs and PVOs that participated in the relief effort for the Kurds. Some were in the area of operations prior to the arrival of military forces.

⁶⁷ EUCOM AAR, p. 2.

⁶⁸ *Ibid.*, p. 8. A total air package of the CTF's capabilities was employed daily, consisting of aircraft from the four U.S. services and from nine coalition nations. Coordination and integration with the Turkish Air Force was a daily requirement.

⁶⁹ *Ibid.* Movement of relief supplies, humanitarian forces and returning refugees often conflicted and competed with movement of ammunition, equipment and materials required by the security forces.

⁷⁰ EUCOM AAR, p. 4.

⁷¹ LTC Hayward S. Florer, interview with author, Fort Leavenworth, KS, 2 April 1994. LTC Florer was commander of the 1st Special Forces Battalion, 10th Special Forces Group, during its deployment as part of Joint Task Force Alpha, a subordinate command of CTF-PC. In the interview, LTC Florer stated that task variety was high due to the frequent and unpredictable intervention of the Turkish military in his unit's operations, the volatility of Turk-Kurd relations, and the occasional unannounced and uncoordinated arrival of coalition forces into his unit's area of operations.

⁷² EUCOM AAR, p. 8.

⁷³ Rudd, pp. 140-141. LTC Rudd's description of the problems with the application of a 48 hour Air Tasking Order planning cycle to the operation is

insightful to those who may rely on the use of current practices and procedures to OOTW.

⁷⁴ EUCOM AAR, p. 3. The Peshmerga is the military arm of the Kurdish Democratic Party, the largest of the dissident groups controlling the area in northern Iraq along the Turkish border.

⁷⁵ Headquarters, Department of the Army, B Company, 1st Special Forces Battalion, 10th Special Forces Group, "After Action Report - Operation Provide Comfort" (APO New York 09050: 7 June 1991), p. A-2.

⁷⁶ Tushman and Nadler, p. 619.

⁷⁷ Shalikashvili, HASC Testimony, 4 Sept 91, p. 27. These tasks were consolidated under Joint Task Force Alpha, the force primarily responsible for conducting the humanitarian relief operation.

⁷⁸ Florer interview. The choice of Special Forces for the humanitarian assistance task is probably more appropriate than light infantry due to the former's experience in this type of mission. The close correlation of some SOF missions to this type of operation simplifies the transition for these units into humanitarian assistance and refugee relief. They also come with a built-in medical complement that can deploy quickly.

⁷⁹ The tasks associated with each of the types of forces included in subunit B area taken from Shalikashvili, HASC Testimony, 4 Sept 91, p. 27. These were the types of tasks assigned to JTF-B.

⁸⁰ LTC Gordon W. Rudd, "Operation Provide Comfort: One More Tile on the Mosaic," paper presented to the U.S. Army Center of Military History, no date, p. 26.

⁸¹ EUCOM AAR, p. 8.

⁸² Ibid., p. 6

⁸³ Ibid. The Civil Affairs and Combined Support Commands supported JTF-B in its security mission and in the establishment of the transition centers.

⁸⁴ Rudd, "Operation Provide Comfort," unpublished paper, pp. 92-98.

⁸⁵ Ibid., pp. 140-141, and EUCOM AAR, p. 9.

⁸⁶ EUCOM AAR, p. 5.

⁸⁷ Ibid., pp. 15-16.

⁸⁸ Ibid., pp. 2, 13.

⁸⁹ CAC Newsletter, p. 8 and EUCOM AAR, p. 14. The CAC Newsletter actually recommends that the medical command and control element and staff become integrated into the Civil Affairs Command of into the Joint Task Forces. The EUCOM AAR supports this recommendation. The AAR states that the large number of medical organizations, both military and civilian, from so many different countries and services compounded the problem of developing a centralized system of medical support. The AAR goes on to state that as the operation progressed these organizations began to work together and coordinate their efforts and specialties through mutual adjustment.

⁹⁰ JPUB 3-0, pp. II-1 to II-2.

⁹¹ Types of liaison devices range from liaison officers to the Coalition Coordination, Control, Communication and Integration Center (C3IC) used coordinate the efforts of the Saudi Arabian Combined Joint Forces Command and the U.S. Central Command during Operations Desert Shield and Desert Storm. See LTC Marc Michaelis' article in Military Review for a description of the C3IC. LTC Marc Michaelis, USA, "The Importance of Communicating in Coalition Warfare" Military Review (November, 1992), pp. 40-50.

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