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# **US Air Force Air Campaign Planning: Paying the Bills or Paying the Price?**

**A Monograph  
by  
Major Douglas C. Rodgers  
United States Air Force**



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### **ABSTRACT**

**US Air Force Air Campaign Planning: Paying the Bills or Paying the Price?** by Major Douglas C. Rodgers, USAF, 49 pages.

This monograph discusses the question of whether the United States Air Force (USAF) Air Campaign Planning Process is compatible with the theater campaign planning process outlined in joint publications such as Joint Pub 3: Doctrine for Joint Operations and Joint Pub 5.001: JTTP for Campaign Planning.

This paper begins with a comparison of key terms used in the two planning processes, joint and USAF. These terms provide a basis of comparison and analysis for the discussion of the joint campaign planning cycle as outlined in Joint Pub 5-00.1 and the air campaign planning process from the Joint Doctrine Air Campaign Course (JDACC) "Air Campaign Planning Handbook." The monograph compares the two planning processes and analyzes their potential integration in terms of planning process inputs and outputs.

The monograph concludes that the USAF air campaign planning process is, in fact, doctrinally compatible with the joint campaign planning cycle. Although Air Force doctrine acknowledges the potential for a stand alone campaign, the major focus of the USAF planning effort is for an air campaign plan, subordinate to the theater campaign plan, which focuses operations and resources towards the achievement of theater objectives.

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## I. INTRODUCTION

The nature of modern warfare demands that we fight as a team...Effectively integrated joint forces expose no weak points or seams to enemy action, while they rapidly and efficiently find and attack enemy weak points. Joint warfare is essential to victory (emphasis in original).

Joint Pub 11

The US Army's warfighting doctrine reflects the nature of modern warfare....It is inherently a joint doctrine that recognizes the teamwork required of all the services...

FM 100-5<sup>2</sup>

The Cold War is over! The Berlin Wall fell and peace now reigns supreme throughout the world. No longer is world peace threatened by a potential confrontation between the super powers, the United States and the Soviet Union. These feelings, expressed by millions, echoed throughout the world in December 1989. As a result, the support for large, expensive defense forces crumbled worldwide as the calls for "butter" instead of "guns" grew more strident. In concert with popular demand, successive US administrations have not only cut defense spending but accelerated the associated downsizing of US armed forces as well.

However, the potential for military conflict war has not gone away. In August 1990, Saddam Hussein, dictator of Iraq, attacked and conquered Kuwait. Immediate military intervention by the US and its coalition partners resulted in his defeat and withdrawal

from Kuwait approximately eight months later. The resulting conflict was a large, conventional war using heavy armored forces and other modern weapons, just the type of conflict thought to be impossible after the fall of Communism and the dissolution of the Warsaw Pact military alliance. Furthermore, slightly more than a year after the expulsion of Hussein from Kuwait, the US again committed armed forces to action, this time providing security for humanitarian operations in Somalia. Beginning in December 1992, this operation, *RESTORE HOPE*, ended 31 March 1994 and steadily shifted in both mission objectives and magnitude of violence throughout its existence. In addition to Somalia, numerous other countries in the world such as Sudan, Ethiopia, and Bosnia-Herzegovina are beginning to reach a "full boil" and may soon require significant commitment of US armed forces.

Even though trouble spots appear to be increasing throughout the world, the US armed forces are steadily being reduced. September 1993 saw the release of the "Bottom-Up Review," an in-depth Department of Defense review of the capabilities and force structure required for the defense of US national interests in light of the new world security environment.<sup>3</sup> A significant force reduction recommendation resulted from this study. Examples of the reductions include decreasing the number of active US Army divisions from 18 to 10 (a

44 percent reduction) and the active fighter wing equivalents (FWE) from 25 to 13 (a 48 percent reduction).<sup>4</sup> This report also placed great reliance on the ability of technology to overcome and compensate for these suggested reductions as well as a need for improvements to US strategic lift capabilities.<sup>5</sup> Force projection, however, into largely undeveloped regions is a key mission easily inferred from the "Bottom-Up Review."<sup>6</sup> Combining the recognized shortage of strategic lift and force reductions with a requirement for dealing with two nearly simultaneous Major Regional Conflicts (MRCs) suggests that US armed forces will be required to take on more missions than ever before. This, in effect, means that the services must be capable of engaging in "come as you are" operations.

To ensure successful accomplishment of the force projection mission on favorable terms, the US armed forces must, on an ever increasing basis, participate in joint, or multi-service, operations which take advantage of the synergies created by the combination of the services' unique strengths. To maximize these synergistic effects, some form of effective planning must be accomplished at both the joint and service component levels.

The question posed here is whether or not the United States Air Force (USAF) Air Campaign Planning Process is compatible with the theater campaign



planning process outlined in joint publications such as Joint Pub 3: Doctrine for Joint Operations and Joint Pub 5-00.1: JTTP for Campaign Planning. This monograph reviews the Air Force air campaign planning process, as formulated by the USAF Doctrine Center, taught by the Air Command and Staff College, and applied by USAF planning staffs, to determine the exact nature of its compatibility with the joint process. For purposes of discussion, this paper defines a process as "a system of operations in the production of something," in this case a theater or air campaign plan.<sup>7</sup>

The overall frame of reference for this monograph's review of the two planning processes is that of a theater level Combatant Commander, dual-hatted as the Joint Force Commander (JFC), first establishing a Joint Force Air Component Commander (JFACC) in his theater and then developing a theater campaign. Additionally, the JFACC planning staff, charged with developing the appropriate supporting campaign plan, consists of both the JFACC's direct subordinate planners as well as those from the USAF Headquarters planning staff, Checkmate. This reflects actual USAF planning practices during *DESERT STORM*.<sup>8</sup>

To answer this research question, the remaining portion of the monograph is divided into four sections. Section II defines key terms from both the joint and USAF planning processes which provide a common

reference point for the subsequent discussions. Section III describes each of the campaign planning processes as outlined in relevant publications, compares both of them, and then analyzes the potential for the successful integration of the USAF planning process into the joint planning process. The next to last section, Section IV, specifically answers the research question using the results of the comparison and analysis from Section III. Finally, Section V provides the reader with some possible recommendations how to improve, if necessary, the USAF Air Campaign Planning process or its subsequent integration to ensure it best serves the joint commander's needs.

## II. KEY TERMS

Common terminology helps to establish a reference point from which to begin the comparison of the joint and USAF planning processes. This monograph presents and compares several key terms using their respective definitions and inherent characteristics. These terms, in this author's view, provide an elemental linkage between the joint and USAF campaign planning processes. The command level considered for the former is that of the theater commander preparing a theater campaign plan while the latter is viewed within the context of its resulting plan being a supporting plan for that theater commander.

## Campaign

Joint Pub 3-0: Doctrine for Joint Operations defines a campaign as "a series of related military operations aimed at accomplishing a strategic or operational objective within a given time and space."<sup>9</sup> A clear understanding of this term between the JFC and his subordinate USAF commander, in this case the JFACC, is crucial since the end product of their respective planning processes is an executable and achievable theater campaign plan. Although viewed from a context of aerospace power application, the USAF definition is surprisingly similar. The JFACC Primer says a campaign is "a series of related military operations aimed at achieving common objectives normally in a finite period of time, and which can achieve strategic results."<sup>10</sup> A quick comparison shows that both definitions emphasize the related nature of military operations attempting to achieve either strategic or operational level objectives. Furthermore, they both stress the common constraints of time and space in relation to the achievement of said objectives.

One area of concern arises in a review of the various publications which define and expand on the term "campaign." The Air Force uses "campaign" to describe activities in support of a JFC. However, the Joint Chiefs of Staff, in "A Doctrinal Statement of Selected Joint Operational Concepts," go to great

length to assert that only the JFC conducts campaigns; the functional and service commanders "conduct subordinate and supporting operations, not independent campaigns."<sup>11</sup> This issue is simply an argument of semantics. What is important to remember, however, regardless of the name used, is that the Air Force states that the purpose of an air campaign is to employ "...all available theater air and space forces to accomplish or support the theater objectives established by the JFC."<sup>12</sup> There should be no doubt in anyone's mind that the USAF focuses on the achievement of theater objectives, regardless of the term used to describe the related operations for achieving those objectives. In effect, both the joint world and the USAF are in harmony regarding the definition and usage of the term "campaign."

#### Campaign Plan

The next step, then, is to evaluate how the elements of a campaign are combined into an integrated whole. The American Heritage Dictionary of the English Language defines the word "plan" as "any detailed scheme, program, or method worked out beforehand for the accomplishment of an object."<sup>13</sup> Using this definition as a starting point, the idea of a campaign plan is obviously to plan appropriate military operations which lead to accomplishment of theater objectives. In support of this concept, the USAF publicly

proclaims that, through campaign plans, theater commanders "have set the operational tempo and direction for the conduct of battles, envisioned and assigned objectives, developed concepts, and coordinated logistical means to achieve victory over enemy forces."<sup>14</sup> The key tenets espoused by the USAF are that a campaign plan:

"...provides an orderly scheme of military operations...orients on the enemy's center or centers of gravity...phases a series of related major operations...provides operational direction and tasks to subordinates...(and) synchronizes aerospace, land and sea efforts into a cohesive and synergistic whole."<sup>15</sup>

The description and key elements used by the US Air Force, when combined with the definition of a campaign, tie in neatly with the American Heritage Dictionary's concept of a preplanned and detailed scheme for the accomplishment of some object and support the concept of a campaign plan.

Joint doctrine uses similar terminology to define a campaign plan. An Armed Forces Staff College publication, AFSC Pub 2, describes a campaign as a "plan for a series of related military operations aimed to accomplish a common objective, normally within a given time and space."<sup>16</sup> AFSC Pub 2 further expands this idea by describing the campaign plan as the "operational extension of a combatant commander's theater strategy."<sup>17</sup> With emphasis squarely placed on the accomplishment of theater objectives, the joint and USAF

idea of a campaign plan are in close agreement with each other.

### Military Operations

As mentioned in the discussion of campaigns, some controversy exists in the use of the term "military operations." To try to clear up this issue, the definition for "military operations" used in this monograph is:

A military action or the carrying out of a strategic, tactical, service, training, or administrative military mission; the process of carrying on combat, including movement, supply, attack, defense, and maneuvers needed to gain the objectives of any battle or campaign.<sup>18</sup>

Interestingly enough, this is the exact definition used by the USAF in Air Force Manual 1-1, Basic Aerospace Doctrine of the United States Air Force.<sup>19</sup>

Therefore, it appears that, again, joint and USAF terminology is mutually supporting.

One further definition of "military operations" needs consideration. AFSC Pub 2 greatly expands the above definition by saying:

A military operation may be described as military action of more or less constant character aimed at a singular tactical, operational or strategic objective that can be executed in a limited time using one operation order and one force list. An operation may stand alone as a single episodal event, or it may be a phase within a campaign. While military operations usually feature the use or threat of force, some are conducted for reasons other than combat, such as permissive evacuation or demonstration of alliance solidarity. The duration of military

operations is generally measured in days and weeks.<sup>20</sup>

Interesting to note is the difference in scale between the two definitions. The first concentrates mainly on combat operations while the second expands into potential non-combat operations. As the possibility of a major conventional war appears to be decreasing, the second definition holds a greater potential for campaign planners in the future.

### Air Operations

The expression "air operations" is unique of those associated with campaign planning. What makes this phrase so interesting is that its definition and prime characteristics are found in Joint Pub 3-0 and not in the previously mentioned Air Force publications. In addition, it is quite broad in its definition and relates directly to USAF doctrine outlined in AFM 1-1, Basic Aerospace Doctrine of the United States Air Force. Air operations are defined by what they are and what they provide to a Joint Force Commander (JFC).

For example, Joint Pub 3-0 states:

Air Operations seek to gain control of the air and then to allow all friendly forces to exploit this control for military and non-military purposes. Control of the air protects friendly nations and US Armed Forces as well as creates advantages for operations of all components.<sup>21</sup>

It continues on by highlighting the four primary missions for air operations: strategic attack, air superiority, interdiction, and close air support.<sup>22</sup>

Reviewing AFM 1-1, one notes that Air Force doctrine recognizes four roles for aerospace employment: aerospace control, force application, force enhancement and force support.<sup>23</sup> Each of these is further subdivided into typical missions flown in support of this role. For example, strategic attack, interdiction, and close air support fit within the force application role while air superiority supports aerospace control.<sup>24</sup> The outcome is that the concept of air operations as defined by joint publications is well supported by USAF doctrine even though not specifically identified within USAF publications.

#### Air Campaign Plan

Regarding the earlier mentioned controversy over the use of the words "operations" and "campaign" as associated with campaign planning, the operative characteristics of an air campaign plan imply much which alleviates this controversy or makes it irrelevant. Developed by the JFACC as a method of "employing all available theater air and space forces to accomplish or support the theater objectives," the air campaign plan is designed to "...link specific air objectives and tasks with theater and military objectives."<sup>25</sup> Further discussion in the JFACC Primer says the plan "...harmonizes aerospace control, force application, force enhancement, and force support roles," showing a direct linkage to the concept of air operations as



outlined in Joint Pub 3-0. The air campaign plan is "...a subset of the Theater Campaign Plan, and is the vehicle which the JFACC uses to document his plan for unifying joint/combined aerospace operations."<sup>26</sup> Although not directly described in joint publications, the philosophy supporting an air campaign plan agrees with the prevailing doctrine of joint campaigns. This further reduces the "war of words" generated in the debates on either operations versus campaigns or independent subordinate campaigns versus theater campaigns.

#### Center(s) of Gravity

Arguably the most significant term involved in the campaign planning process is "center(s) of gravity." This term, more than any other, is likely to generate large amounts of heated discussion emphasizing, by the resulting dialectic, its central importance. Regardless of the exact definition or characteristics, a center of gravity provides a logical focus for development of all campaign plans whether air, land, sea, or theater.

The most widely quoted definition of "center of gravity" comes from Carl Von Clausewitz who said it is "...the hub of all power and movement, on which everything depends."<sup>27</sup> In modern terminology, his definition appears to describe a center of gravity much like today's "objective" or "...the point against which all our energies should be directed."<sup>28</sup> Important to

remember is the context for Clausewitz's theoretical work. He derived his theory from observations of Napoleon, who, as both a general and political ruler, attacked his opponents' armies with the goal of crushing them. With the French state's power heavily integrated with the army, this approach to war resulted in great victories, as well as some defeats, for Napoleon. Technology and political considerations have changed greatly since 1815, suggesting the need for a modernization of Clausewitz's definition. John Warden, a noted aerospace theoretician, proposes one such revision.

Warden's definition is much broader in scope than that of Clausewitz. In his book, The Air Campaign: Planning for Combat, Warden describes a "center of gravity" as "...the point where the enemy is most vulnerable...where an attack will have the best chance of being decisive."<sup>29</sup> In fact, Warden states that campaigns must be "...planned, coordinated, and executed with the idea of defeating the enemy by striking decisive blows."<sup>30</sup> Implied in this definition is that the center of gravity is of critical importance to an enemy, the Clausewitzian "hub of all power." However, it is not necessarily the opponent's armed forces which serve as a center of gravity in the modern interpretation. Warden develops and uses a five ring model to clarify his concept of the center of gravity. This

model consists of a series of nested circles with the first and innermost representing leadership, the second key production, the third infrastructure, the fourth population, and the fifth, the fielded military forces.<sup>31</sup> Each of the circles is interrelated and represents, on its own merits, a separate center of gravity for consideration in campaign planning.

From the two theorists mentioned above, Clausewitz and Warden, the contemporary definition of the center of gravity emerges. Using characteristics central to its definition, the JFACC Primer states that the:

Key features of a center of gravity are its importance to the enemy's ability to wage war, its importance to the enemy's motivation and willingness to wage war, its importance to the enemy political body, population, and armed forces, and the enemy's consciousness of these factors.<sup>32</sup>

Joint doctrine contains a similar perspective on the definition of center of gravity. Again using inherent characteristics as the defining tool, AFSC Pub 2 states that a center of gravity contains "that characteristic, capability, or locality from which a military force, nation, or alliance defines its freedom of action, physical strength, or will to fight."<sup>33</sup> This is a broader interpretation than that of Clausewitz, allowing for the inclusion of political and technological changes since the 1800's. Besides, it meshes well with the concept of center of gravity as espoused by Warden in his various works.

What is most encouraging is that, in this most critical term, the "center of gravity," there seems to be widespread agreement as to an acceptable definition and associated characteristics. Since a center of gravity provides focus, this mutual understanding bodes well in the planning and execution of theater and subordinate campaign plans.

### Phasing

Phasing provides a method to more efficiently organize the various events and forces comprising a campaign. Joint Pub 3-0 states that a phase:

...represents a period during which a large portion of the forces are involved in similar or mutually supporting activities (deployment, for example). A transition to another phase...indicates a shift in emphasis.<sup>34</sup>

Another joint publication adds to this definition by describing phasing as a "...way of organizing the extended and displaced activities of the campaign...into more manageable parts that allow flexibility in execution."<sup>35</sup> Together these definitions suggest that theater campaign objectives benefit from the partitioning of the plan into smaller "bite size" portions for both planning and eventual execution.

The Air Force recognizes the value of phasing and stresses its inclusion in its campaign planning process. For example, the Joint Doctrine Air Campaign Course (JDACC) "Air Campaign Planning Handbook"

describes phasing as a "key concept."<sup>36</sup> Furthermore, in discussing phasing in regards to an air campaign, the JFACC Primer says:

...phasing provides an orderly schedule of military decisions and indicates preplanned shifts in priorities and intent. The air campaign is likely to consist of several phases, with priority given to operations that are most important to achieving theater objectives.<sup>37</sup>

Both Air Force documents, the JFACC Primer and the "JDACC Air Campaign Planning Handbook," directly state the importance of phasing to effective campaign planning. In fact, the agreement between joint and USAF publications on this issue is quite strong, with the potential of reducing the parochial "friction" inherent in multi-service planning exercises. Phasing is quite important to the theater commander, as well as subordinate commanders, as it assists them to "...think through the entire operation and to define requirements in terms of forces, resources, and time."<sup>38</sup>

#### Apportionment

The final term discussed in this section, apportionment, is one most often associated with the aerospace assets used by a theater commander during campaign planning and subsequent execution of that plan. A useful and easily understood definition says:

Apportionment is the determination and assignment of the total expected effort by percentage and/or priority that should be devoted to the various air operations and/or geographic operations for a given period of time.<sup>39</sup>

In addition, the Air Force view is that the "total expected effort made available to the JFACC is determined by the JFC (emphasis added) in consultation with the component commanders..."<sup>40</sup>

Although apportionment appears to focus primarily on aerospace assets, it gives the theater commander freedom to control these assets, ensuring their use to best accomplish his objectives. This is well expressed in Joint Pub 3-0 which states "apportionment assists JFCs to ensure the weight of the JFACC air effort is consistent with campaign phases and objectives."<sup>41</sup>

Within the various definitions and characteristics attributed to "apportionment" exist those common threads of campaign objectives and the JFC's control which consistently appear throughout all of the terms discussed in this monograph. Once again, the joint doctrine on campaign planning is well supported by the USAF's position, and doctrine, on one of the theater commander's key management tools, apportionment.

### III. Comparison and Analysis

The previous section demonstrated that the USAF and joint planning terms are quite similar in many respects. This, in turn, provides a starting point for the following section which compares and analyzes the associated planning processes. Some external differences are obvious; for example, the joint process outlined in Joint Pub 5-00.1: JTTP for Campaign Planning

(Revised Initial Draft) has eight steps<sup>42</sup> while the corresponding USAF process has five stages.<sup>43</sup> The question, however, is whether the internal workings of these processes are compatible; in particular, does the USAF campaign planning process support the joint campaign planning process?

This section answers this question by first looking at the eight steps of the joint process to determine the resulting outputs. Next, the outputs derived from the joint campaign planning process are compared to those inputs required by the USAF in planning its campaign. As the USAF campaign is subordinate to the joint theater campaign, the various outputs and inputs should be mutually supporting. If not, then a potential disconnect does exist. Finally, the two processes will be integrated to show the total picture of a subordinate campaign associated with its respective theater campaign. For purposes of this paper, each step is considered complete when the process has fulfilled all of the outlined requirements. However, in a real theater of operations the planning cycle is continuous until all national and theater objectives are met.

#### Joint Planning Process

The emphasis on campaign planning today is directed primarily at the theater level combatant commander. Normally accomplished during crisis action planning,<sup>44</sup> the campaign planning cycle provides the

combatant commander with an "orderly series of planning actions and events on how to develop a wartime campaign plan."<sup>45</sup> Before continuing on the planning process, a brief discussion of the final product, the theater campaign plan, is necessary.

Theater campaign plans serve as the overall focus within a combatant commander's theater of operations. They "require a specific mission based on strategic objective(s) and are derived from the theater strategy."<sup>46</sup> Furthermore, these plans "are time sensitive, iterative and adaptive."<sup>47</sup> Such qualities, for example, time sensitivity, lend themselves to the development of theater campaign plans during crisis action planning.

Theater campaign plans reflect certain characteristics in their form and content. Although not all plans have every characteristic, there are common threads which run through each and every one. Theater campaign plans provide, through the theater commander's intent, broad concepts for operations and sustainment issues germane to the accomplishment of national or theater strategic objectives. Furthermore, they integrate the various elements of military power--air, land, sea, special, and space forces--into a unified whole focused on the theater objectives. This integration, in turn, leads to the organization of subordinate forces along with the necessary command and



control relationship. Building on this developed structure, the theater campaign plan outlines, in broad terms, the necessary factors required for subordinate planning and provides the measures of success which include termination objectives as well as any required post-conflict missions. The result is that the theater campaign plan provides specific objectives and tasks to the subordinate commanders for their planning.<sup>48</sup>

The campaign planning cycle, defined in Joint Pub 5-00.1, contains eight steps as mentioned in the opening paragraph of this section. It is not a one time planning exercise but instead may be "...self-generating depending on changing conditions...and may supplant steps within the deliberate or crisis action planning."<sup>49</sup> The delineated steps within the joint doctrine are:<sup>50</sup>

- (1) *Receipt of Strategic Guidance*
- (2) *Mission Derived*
- (3) *Situation Study*
- (4) *Objectives*
- (5) *Commander's Concept*
- (6) *Tasks for Subordinates*
- (7) *Supporting Plans*
- (8) *Feasibility and Requests for Change or Augmentation*

*Receipt of Strategic Guidance* establishes the foundation for the primary theater campaign plan as well as the associated subordinate campaign plans. This guidance, ordinarily provided by the National Command Authority (NCA) to the combatant commander, begins, and pushes, the planning cycle. Although

normally associated with crisis action planning, this cycle may receive strategic guidance from existing Operations Plans (OPLANS) or Contingency Plans (CONPLANS) depending on the urgency of the situation. The commander, using this guidance, develops and promulgates a theater strategy expressed in terms of broad concepts and tentative courses of action (COA). This strategy contains the method for achieving the desired end state and ensures compliance with the strategic guidance.<sup>51</sup>

The second step, *Mission Derived*, is the logical follow-on after receiving the strategic guidance. The theater mission, as it encompasses strategic objectives, is itself strategic in nature. The combatant commander derives the mission from this guidance often expressing it in general terms using theater objectives. Further refinement takes place after specifics have been developed in the commander's estimate. Within the mission context exist a series of specified and implied missions and tasks derived from the aforementioned strategic guidance, national or alliance documents (i.e., the Unified Command Plan (UCP), or the Joint Strategic Capabilities Plan (JSCP)), or even initiatives from the theater commander.<sup>52</sup> From these missions and tasks, encapsulated into the theater mission, comes the commander's intent which provides a vision for the campaign, defines the desired end state

and how to achieve it, and finally, serves as a focus for subordinates' actions, both present and future.<sup>53</sup>

Having reviewed the strategic guidance and developed an appropriate theater mission, the combatant commander's next step in the planning process, *Situation Study*, provides the detailed informational support necessary to develop the campaign plan. During this part of the planning, the theater commander develops three items which provide and reflect his perspective of the theater: the strategic estimate, the theater strategy, and the commander's estimate.<sup>54</sup> Each of these components of the *Situation Study* are part of "...a continuous process from which the campaign plan is formulated and strategic concepts and COAs are derived.<sup>55</sup> They also are closely interrelated wherein a change in one component produces a change in another.

The theater commander develops the strategic estimate after a thorough study of the potential threats, nature of expected missions and the strategic environment. It includes all aspects which may potentially and adversely impact the achievement of the campaign's objectives. Resulting from this estimate is the development of the theater strategy.<sup>56</sup>

A theater strategy serves as a vehicle for the combatant commander to express national strategic tasks, objectives and implicit guidance into a coherent foundation for theater planning. This, in effect, is

the foundation for all subsequent theater planning and provides focus for the development of the commander's estimate.<sup>57</sup>

The final component of the *Situation Study* is the commander's estimate. This estimate performs several key functions in the planning process. First, it provides an orderly framework for the planning. Second, it centers the commander's attention on the threat and any circumstances which may affect the military situation. Third, it provides critical information to the NCA through the Chairman, Joint Chiefs of Staff (CJCS), during periods of crisis. Fourth, and finally, it provides the commander's recommended course of action (COA) to the NCA should the situation so warrant.<sup>58</sup>

With the completion of the commander's estimate, the third step of the joint planning cycle, *Situation Study*, ends. This step allows a thorough understanding of the guidance and missions required by the NCA for inclusion in the theater campaign plan. Furthermore, it allows the combatant commander to ensure all of the assigned national or strategic objectives are accounted for during the planning process. With this information available, the commander now determines the specific theater objectives.

The fourth step in the joint campaign planning process, *Objectives*, is critical to the complete operational campaign design. These objectives, derived

from national military and/or alliance strategic objectives, establish "...the condition(s) necessary to achieve the strategic aim and reach the desired end state."<sup>59</sup>

The *Objectives* step is further subdivided into three smaller segments which are (1) define objectives, (2) prioritize objectives, and (3) identify specific tasks required to achieve objectives.<sup>60</sup>

The objectives must be realistic and are subject to restraints or constraints from higher authorities such as, for example, the NCA. With this in mind, the combatant commander prioritizes the selected objectives by evaluating them in terms of the guidance received and the expectation of a reasonable return for the time and resources expended. Finally, the commander outlines the specific tasks necessary to achieve the objectives by defining them in terms of the identified strategic and operational center(s) of gravity.<sup>61</sup> Having completed the *Objectives* step, the combatant commander now begins the process of developing his commander's concept.

The *Commander's Concept*, the fifth step in the planning cycle, is the "core for developing the theater campaign plan."<sup>62</sup> It provides operational direction to the subordinates for their planning and considers deployment and sustainment as well as combat operations. The concept's purpose is to organize the air, land, and

sea forces, including special operations forces, into a single, cohesive joint organization for the purpose of defeating the enemy centers of gravity.<sup>63</sup>

Within the overall commander's concept are four smaller elements, the operational, logistic, deployment, and organizational concepts.<sup>64</sup> The operational concept furnishes the combatant commander's vision of the what, where, when, and how (emphasis added) theater operations will affect the enemy. In addition, this operational concept provides subordinates with a focus for their own planning, the acceptable risks, and the commander's priorities while promoting unity of effort within the theater.<sup>65</sup>

Supporting this operational concept is the logistic concept which is derived from the selected COA and an evaluation of the theater throughput and distribution system. The logistics concept organizes those resources and logistic capabilities within the theater which are necessary to support the operational concept.<sup>66</sup>

Closely associated the two previous concepts, operational and logistics, is the deployment concept. This notion looks at deployment in the context of creating a relative advantage within the theater in terms of theater strategy execution and achievement of operational objectives. The deployment concept also covers the sequencing of logistic support and

operational capabilities into the operational theater.<sup>67</sup>

The final element within the overall commander's concept is the organizational concept. This concept assigns the organizational and command relationships necessary for unified operations of the theater forces. The combatant commander must establish the command and control relationships prior to assigning specific tasks to the subordinate commanders. Centralized control and decentralized execution form its core while serving to clarify the commander's intent and blending the previous three concepts, operational, logistics, and deployment, into a coherent whole.<sup>68</sup>

With the integration of the four sub-concepts into a cohesive overall commander's concept, the fifth step in the joint campaign planning process, *Commander's Concept*, is complete. Using the information accumulated to this point, the commander now assigns, to subordinate commanders, those tasks necessary to achieve the realize all of the theater objectives.

*Tasks for Subordinates* is the next step of the joint planning cycle discussed in this portion of the monograph. Within this step, specific tasks are assigned to subordinate commanders, which, upon accomplishment lead to the desired campaign end state. These tasks, derived from the theater military objectives, are shaped by the planned synchronization of

theater forces, the intelligence estimate, and the planned phasing and sequencing of forces within the theater. The combatant commander prioritizes these tasks to gain the advantage over the enemy. *Tasks for Subordinates* are the natural outgrowth of the theater commander's vision and intent combined with the selected command and organizational relationships determined in the previous step, the *Commander's Concept*.<sup>69</sup>

The seventh step of the joint planning cycle, *Supporting Plans*, gives the JFC insight into the resource allocation necessary for his campaign, operationally and in terms of sustainment. This insight is viewed from the perspective of the total resources available and integrates the subordinate and theater campaigns both vertically and horizontally, thus ensuring resource allocation efficiency. These supporting plans are based on input from various agencies and organizations such as supporting commanders, functional and service commanders, as appropriate, and any coalition partners.<sup>70</sup> National agencies such as the Department of State, Defense Intelligence Agency, United States Information Agency and national reconnaissance and surveillance assets, provide support to the theater commander as well.<sup>71</sup>

The functional commanders provide plans which direct the employment of their assigned forces as well as support the theater campaign plan. These plans, called



supporting plans, may be based on "planned major operations, phases or stages of the campaign, or missions, tasks, or objectives assigned or derived by the JFCC (Joint Force Component Commander)."72

The final step in the joint planning cycle determines the feasibility of the campaign as planned. This step, *Feasibility and Request for Change or Augmentation*, ensures the plan can accomplish what it was intended to do, that it has the flexibility to adapt as conditions change, and that it does not become so outdated or overcome by events as to be worthless to those responsible for its execution. It provides the opportunity for a "sanity check" prior to orders being issued to the troops. Should problems be discovered, this step provides the method for correcting, or as a minimum, developing a work-around for them.<sup>73</sup>

In summary, the eight steps of the joint campaign planning cycle, through *Feasibility and Request for Change or Augmentation*, is complete. From this planning cycle, numerous items, such as the theater commander's vision, intent, and concept evolve. Using these, the combatant commander develops appropriate theater objectives as well as an organizational and command structure. This information, along with specified tasks, is passed on to the subordinate commander, in this case a USAF JFACC, to begin required subordinate planning.

### USAF Planning Process

With the key information provided by the theater commander, the JFACC and staff begins the air campaign planning process. One important point to remember is that the air campaign planning is "...an integral part of, and designed to support, the theater campaign plan."<sup>74</sup> With this as the focus, this monograph now looks at the air campaign planning process.

The air campaign planning process, outlined in the "JDACC Air Campaign Planning Handbook," describes a five stage, or step, process for planning an air campaign used by the JFACC in support of the theater commander. The five stages of this process are:<sup>75</sup>

- (1) *Stage I: Combat Environment Research*
- (2) *Stage II: Objective Determination*
- (3) *Stage III: Strategy Determination*
- (4) *Stage IV: Centers of Gravity Identification and Selection*
- (5) *Stage V: Plan Development*

Prior to beginning the planning process, a lead-in phase, identified as the *Initial Preparations*, must be accomplished. Although not formally identified as one of the five stages, this step lays the groundwork for those that follow. It includes a review of the theater campaign plan with special emphasis on Annex A (Task Organization), Annex B (Intelligence), Annex C (Operations), and Annex J (Command Relationships) as well as the Intelligence and Logistics Estimates. This purpose of this review is to provide the USAF planners a feel

for the magnitude of the tasking supported by the air campaign plan.<sup>76</sup>

With this foundation firmly established, the formal process begins. The stages, discussed in a sequential fashion in this paper, each provide an end product. However, the stages are not required to be completed in sequential order. They are, as were the joint planning process steps, interactive throughout the planning process and terminate only when the need for the use of aerospace assets within the theater has ended.<sup>77</sup>

*Combat Environment Research*, also called intelligence preparation of the battlefield, begins the formal air campaign planning process. The emphasis in this stage is on gathering information about both enemy and friendly capabilities while trying to comprehend dynamics of the theater. Data collected include, for example, friendly elements of information, available forces, command and control relationships, rules of engagement, base-use and overflight rights, and any applicable treaties and agreements.<sup>78</sup> Furthermore, an evaluation of the air situation is required using the model outlined in the "JDACC Air Campaign Planning Handbook." This model uses the relationship between opposing air forces to determine what level of air superiority exists within the theater and what the desired level should look like at the end of the campaign.<sup>79</sup>

At the completion of this stage, intelligence preparation of the battlefield, the end product, is complete and the next stage, *Objective Determination*, begins.

The purpose of this stage is to "identify the theater objectives airpower can accomplish or support, and "develop clearly defined air objectives that meet, or support the theater objectives through the use of aerospace power."<sup>80</sup> These objectives must be attainable and directly descended from the national and theater objectives. If no linkage exists between an air objective and theater objectives, the planning handbook says to "...reject it as a waste of resources."<sup>81</sup>

Several other factors play a large role in the formulation of air objectives. First, the desired theater end state must be considered as it provides a focus for the objectives. Lastly, any constraints or restraints, imposed by external sources, must be taken into account. All of these issues may change during the span of a campaign requiring planners to be especially cognizant of their continuing impact on the campaign plan.<sup>82</sup>

At the completion of this stage, the planners have a set of objectives, supportive of the theater objectives, which are attainable and focused. With these objectives selected, the next stage determines the way in which these objectives will be achieved.

The third stage, *Strategy Determination*, helps the air campaign planners develop the strategy required for achieving previously determined objectives. Strategy is "...how (emphasis in original) military force is employed to accomplish theater objectives."<sup>83</sup> Further expansion along this line of thought results in a definition of air strategy as "...how (emphasis in original) the JFACC plans to use aerospace power to achieve his air objectives."<sup>84</sup> From an aerospace perspective, the resulting air strategy reflects such terms as strategic attack, offensive counterair, and interdiction. This, then, becomes this stage's final product, an air strategy statement "...designed to achieve the joint force commander's objectives."<sup>85</sup>

Converting the campaign strategy into suitable targets for the employment of aerospace power is the reason for the next step, *Centers of Gravity-Identification and Selection*.<sup>86</sup> To help in this stage, the JDACC recommends a planning tool called "Country X as an Object for Strategic Air Attack." This tool enables the systematic study of a country being considered as the object of an air campaign. It provides a format for analyzing the economic, political, and military structure of the country of interest ending in a collection of centers of gravity, friendly and enemy, for consideration in the air campaign planning process.<sup>87</sup> The end result of the "Country X" study is a

list of enemy centers of gravity and their associated, and prioritized, targets.<sup>88</sup>

After selecting the centers of gravity, the planner must determine some means of evaluating the effectiveness of the operations. These criteria, termed combat assessment criteria, contain Measures of Merit by which to judge success. These Measures of Merit should answer the question "How does the commander know when the objective is achieved?"<sup>89</sup> With the centers of gravity selected and the Measures of Merit in place, Stage IV, *Centers of Gravity-Identification and Selection*, is complete. The final step is to integrate all the data into a single, executable air campaign plan.

The air campaign plan, which describes "key elements of the application of aerospace power,"<sup>90</sup> is the resulting product from the final stage of the USAF air campaign planning process, *Plan Development*. Several functions are served by the campaign plan. First, it harmonizes the various roles of aerospace power (i.e., force application, force enhancement, and aerospace control).<sup>91</sup> Secondly, the plan lists the selected targets and their associated levels of destruction. With this comes the target prioritization, aiding planners in determining the order of target attack. Next, the air campaign plan specifies the levels of effort used against the targets, serving as the foundation for the theater commander's apportionment

decision. Finally, phasing and synchronization, in regards to the theater plan as well as aerospace functions, are highlighted. This ensures a fluid integration of all theater operations whether on the land, sea, or air.<sup>92</sup>

Focused on building a plan supporting the theater commander's objectives, the USAF air campaign planning process is now complete. Resulting from this effort is a coherent air campaign plan, executable by the forces at hand and capable of accomplishing those objectives, both theater and air, which support the overall theater campaign plan. The next portion of the monograph reviews the various outputs from the joint planning process to see if they provide adequate data for the air campaign planners to use in order to develop a subordinate air campaign plan.

### Integration

The logical place for merging the USAF air campaign planning process into the joint campaign planning cycle occurs after step six of the joint cycle, *Tasks to Subordinates*. At this point in the cycle, the theater commander has completed his estimate of the theater environment, distilled national guidance into theater objectives, developed his intent and concept of operations, and provided subordinate commanders (i.e., the JFACC or JFLCC) with any specific tasks or missions required for achievement of the theater objectives.

The joint campaign planning process provides, in effect, the initial inputs for all subordinate campaign planning (up through step six) as well as a system of checks and balances (steps seven and eight) when the subordinate planning is complete.

The USAF planning process merges well with the joint planning process for a number of reasons. During the *Initial Preparation* phase, the JFACC planners are reviewing guidance from the NCA and the theater commanders, to include national and theater objectives, and developing their intelligence estimate of the battlefield. Once the guidance and the enemy are understood, the planners convert the provided objectives into air objectives which directly support the theater objectives. The transition from paper to "steel-on-target" occurs when these derived air objectives are converted into enemy centers of gravity along with their corresponding targets. Next, this data is compiled by the planning staff into a formal air campaign plan which is provided to the theater commander.

The theater commander then reviews the plan to ensure it meets theater objectives and is supportable by the resources within the theater. Should it not meet objectives or be infeasible because of resource constraints, the plan is re-entered into the planning process for the discrepancies to be corrected, or as a minimum, the risk identified.



#### IV. Conclusions

The question posed within this monograph is whether or not the USAF Air Campaign Planning Process is compatible with the theater campaign planning process outlined in various joint publications. After reviewing both the joint campaign planning cycle described in Joint Pub 5-00.1 and the air campaign planning process outlined in the "JDACC Air Campaign Planning Handbook," one realizes the answer to that question is yes. The USAF air campaign planning process is, in fact, doctrinally compatible with the joint planning process. Three key areas of support for this conclusion are found when one examines key terms, USAF planning doctrine, and joint planning doctrine.

The first area of agreement is within the definition of key terms. For example, the definition of the center of gravity is quite similar in both processes. This term has evolved from the relatively narrow definition espoused by Clausewitz, focusing on the enemy army, to a broader definition encompassing the large political and technological changes affecting war today. This expanded definition is reflected in key USAF writings such as Warden's The Air Campaign and the JEACC Primer as well as numerous joint publications such as AFSC Pub 2 and Joint Pub 3-0.<sup>93</sup> Furthermore, terms such as campaign, campaign plan, and phasing, with common definitions and characteristics, produce a

solid foundation for both the doctrines and the associated planning processes.

Using the harmony of common terms as a starting point, current Air Force writings also bolster the idea of a compatible campaign planning process. First, the Air Force recognizes the role that functional planning, in this case by the JFACC, plays in the theater campaign plan. The "JDACC Air Campaign Planning Handbook" states that "all functional planning is an integral part of, and designed to support, the theater campaign plan."<sup>94</sup> In addition, the air campaign plan, developed by the JFACC, supports "...the theater objectives established by the JFC."<sup>95</sup> Finally, the initial stages of the air campaign planning process, as outlined in planning doctrine, require a review of the theater campaign plan and its associated annexes.<sup>96</sup>

The joint planning process itself provides the final evidence supporting this conclusion. In fact, if one views the joint planning process as a large funnel, the idea of compatibility becomes clearer. Strategic guidance, from the NCA, is poured into the top of the funnel which represents the first step of the theater campaign planning process, *Strategic Guidance*. As this process progresses, this guidance is distilled until only tasks and missions to subordinates remain. At this point in the process, the distilled product exits the small end of the funnel depicting step six of the

joint planning cycle, *Tasks to Subordinates*. The USAF planners now take these tasks and missions, documented in the theater campaign plan, and begin their planning.

The significance of this integrated process becomes easier to appreciate after adding a historical perspective. Three historical examples, the Vicksburg Campaign, during the American Civil War, and *Operation Urgent Fury*, the 1983 invasion of Grenada, as well the more recent passing of the 1986 Department of Defense Reorganization Act, the Goldwater-Nichols Bill, highlight how far joint planning has come in an attempt to develop compatible campaign planning.

The Vicksburg campaign, involving Union naval and ground forces, was fought without the benefit of a unified command structure, much less joint doctrine. Each of the senior service commanders, Admiral David D. Porter for the Navy, and General Ulysses S. Grant for the Army, answered only to their respective masters in Washington. However, both commanders, realizing the importance of this campaign to the Union, cooperated fully in all military matters. This occurred because of the personalities involved and not because of joint doctrine or unity of command.<sup>97</sup>

*Operation Urgent Fury*, on the other hand, took place in an era of "joint" cooperation. A joint task force was the orchestrating agency with guidance being provided by numerous higher headquarters. The result

was a multi-service military operation with many conflicting objectives and planning issues. These issues were not resolved prior to the invasion and contributed to large amounts of confusion and, quite possibly, a needless loss of life.<sup>98</sup> Each service involved did separate planning which was not integrated well at theater level.

The 1986 Goldwater-Nichols Bill went a long way towards resolving some of the joint planning issues highlighted by *Urgent Fury*. In addition, an emphasis on an established joint planning document became evident resulting in the publications, such as Joint Pub 3-0, Joint Pub 5-0, and Joint Pub 5-00.1, in use today. These publications provide a robust basis for joint planning and encourage a move away from dependence upon the personality of the commanders, as seen in the Vicksburg campaign, as the driving force in joint campaign planning.

#### V. Recommendations

Although this monograph concludes that the USAF air campaign planning process is compatible with the joint planning process, some recommendations on improving the integration and the process are offered below. These ideas apply to planners of all services and not just those of the USAF.

The first suggestion is for all military organizations involved in joint operations to train on

a regular basis with the joint campaign planning process forming the core of the exercise. Non-joint staff planners should increase their familiarity with Joint Pub 3-0, Joint Pub 5-0, and Joint Pub 5-00.1, as the foundation of their planning work. Furthermore, they should become familiar with the planning doctrines of sister services in order to form a common base of understanding of terms, procedures, and process.

Secondly, the USAF must devote organizational interest to the quality of the Air Force Liaison Officers (LNO) serving at a joint headquarters. These officers must be intimately familiar with the joint planning process, as well as that of the USAF, and provide a creditable source for USAF data, philosophy, and doctrine.

The final recommendation is for the USAF to invite sister service officers to attend the two week Joint Doctrine Air Campaign Course at Maxwell AFB. This provides an opportunity for joint planners to become exposed to the various campaign planning tools and procedures used by the USAF. Furthermore, it provides the opportunity for the Air Force to improve its procedures with an influx of new ideas and a critical review of existing doctrine.

## ENDNOTES

<sup>1</sup> Joint Chiefs of Staff, Joint Pub 1, Joint Warfare of the US Armed Forces (Washington D.C.: Joint Chiefs of Staff, 1991), pg. iii.

<sup>2</sup> US Army, FM 100-5 Operations (Washington D.C.: Department of the Army, 1993), pg. 2-0. Hereafter referred to as FM 100-5.

<sup>3</sup> Les Aspin, "The Bottom-Up Review: Forces For A New Era," (Washington D.C.: Department of Defense, 1993), pg. 1. Referred to as the "Bottom-Up Review" in subsequent usages.

<sup>4</sup> "Bottom-Up Review," pg. 17, and Christopher Bowie, et al., "The New Calculus: Analyzing Airpower's Changing Role in Joint Theater Campaigns" (Santa Monica: RAND Corporation, 1993), pg. 14. Hereafter referred to as the RAND Study.

<sup>5</sup> "Bottom-Up Review," pg. 9.

<sup>6</sup> "Bottom-Up Review," pgs. 6,10.

<sup>7</sup> William Morris, editor, The American Heritage Dictionary of the English Language (Boston: American Heritage Publishing Co., Inc., 1973), pg. 1043.

<sup>8</sup> US Air Force, JFACC Primer, Second Edition (Washington D.C.: Headquarters, US Air Force, 1994), pg. 6. The intent of this document is to provide planners, particularly joint planners, with the means on how to best organize, plan, and execute joint air operations (Foreword). In effect it serves as a doctrinal manual on the application of aerospace power to achieve theater objectives. Referred to henceforth as JFACC Primer.

<sup>9</sup> Joint Chiefs of Staff, Joint Pub 3-0: Doctrine for Joint Operations (Washington D.C.: Joint Chiefs of Staff, 1993), pg. GL-4. Subsequently referred to as Joint Pub 3-0.

<sup>10</sup> JFACC Primer, pg. 20.

<sup>11</sup> Joint Chiefs of Staff, A Doctrinal Statement of Selected Joint Operational Concepts (Washington D.C.: Joint Chiefs of Staff, 1992), pg. 2. Described as Doctrinal Statement in any following entries.

<sup>12</sup> JFACC Primer, pg. 20.

<sup>13</sup> The American Heritage Dictionary of the English Language, pg. 1001.

- 14 JFACC Primer, pg. 19.
- 15 Ibid.
- 16 Armed Forces Staff College, AFSC Pub 2: Service Warfighting Philosophy and Synchronization of Joint Forces (Washington D.C.: US Government Printing Office, 1992), pg. E-3. Referred to in further usage as AFSC Pub 2.
- 17 Ibid., pg. II-3-19.
- 18 Joint Chiefs of Staff, Joint Test Pub 5-0: Doctrine for Planning Joint Operations (Washington D.C.: Joint Chiefs of Staff, 1991), pg. GL-9. Referred to as Joint Test Pub 5-0 in subsequent usage.
- 19 US Air Force, AFM 1-1, Basic Aerospace Doctrine of the United States Air Force, Volume II (Washington D.C.: Department of the Air Force, 1992), pg. 295. Referred to as AFM 1-1 with the appropriate volume in subsequent endnotes.
- 20 AFSC Pub 2, pg. II-1-5.
- 21 Joint Pub 3-0, pg. B-1.
- 22 Ibid., pgs. B-1 to B-2.
- 23 AFM 1-1, Volume I, pgs. 10 to 15.
- 24 Ibid., pgs 10 to 11.
- 25 JFACC Primer, pgs. 20 to 22.
- 26 Joint Doctrine Air Campaign Course (JDACC), "Air Campaign Planning Handbook, 2nd Edition" (Maxwell AFB: Air University, 1994), pg. 10. The JDACC is a two week course, conducted by the Air University at Maxwell AFB, AL, focusing on the "stubby pencil" aspects of air campaign planning experienced by planners of a JFACC's staff. For more information on this course see "Air Campaign Planning" by Lt Col Maris McCrabb in the AirPower Journal (Summer 1993), pgs. 11 to 22. Referred to hereafter as "JDACC Air Campaign Planning Handbook."
- 27 Carl Von Clausewitz, On War, edited and translated by Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), pg. 595.
- 28 Ibid.

29 John Warden, The Air Campaign: Planning for Combat (Washington D.C.: National Defense University Press, 1988), pg. 9.

30 Ibid., pg. 10.

31 Richard Hallion, Storm Over Iraq: Air Power and the Gulf War (Washington D.C.: Smithsonian Institution Press, 1992), pg. 152.

32 JFACC Primer, pg. 23.

33 AFSC Pub 2, pg. 6-3.

34 Joint Pub 3-0, pg. III-24.

35 AFSC Pub 2, pg. II-3-22.

36 "JDACC Air Campaign Planning Handbook," pg. 7.

37 JFACC Primer, pg. 21.

38 Joint Chiefs of Staff, A Doctrinal Statement of Selected Joint Operational Concepts (Washington D.C.: Joint Chiefs of Staff, 1992), pg 4. Referred to in subsequent usage as the Doctrinal Statement.

39 JFACC Primer, pg. 16.

40 Ibid.

41 Joint Pub 3-0, pg. III-37.

42 Joint Chiefs of Staff, Joint Pub 5-00.1: JTTP for Campaign Planning (Revised Initial Draft) (Washington D.C.: Joint Chiefs of Staff, 1993), pg. III-24. Referred to hereafter as Joint Pub 5-00.1.

43 "JDACC Air Campaign Planning Handbook," pg. 4.

44 Joint Pub 5-00.1, pg. III-14.

45 Ibid., pg. III-13.

46 Ibid., pg. III-19.

47 Ibid., pg. III-20.

48 Ibid., pgs. III-20 to 21.

49 Ibid., pg. III-23.



- 50 Ibid., pg. III-24.
- 51 Ibid., pg. III-25.
- 52 Ibid., pg. 25.,
- 53 Ibid., pg. 26.
- 54 Ibid., pg. 27
- 55 Ibid.
- 56 Ibid.
- 57 Ibid., pg. 28.
- 58 Ibid., pgs. 28 to 31.
- 59 Ibid., pg. 32.
- 60 Ibid., pg. 32 to 34.
- 61 Ibid., pg. 34.
- 62 Ibid.
- 63 Ibid., pg. 35.
- 64 Ibid., pgs. 35 to 37.
- 65 Ibid., pg. 35.
- 66 Ibid., pg. 36.
- 67 Ibid.
- 68 Ibid., pg. 37.
- 69 Ibid., pg. 38.
- 70 Ibid.
- 71 Ibid. pg. V-9.
- 72 Ibid.
- 73 Ibid., pg. 38.
- 74 "JDACC Air Campaign Planning Handbook," pg. 5.
- 75 Ibid., pg. 4.
- 76 Ibid., pg. 9.

- 77 Ibid.
- 78 Ibid., pg. 13.
- 79 Ibid., pg. 17. For a more detailed explanation of this air superiority model see John Warden's book, The Air Campaign: Planning for Combat, pgs. 20 to 24.
- 80 Ibid., pg. 21.
- 81 Ibid.
- 82 Ibid., pg. 22.
- 83 Ibid., pg. 26.
- 84 Ibid.
- 85 Ibid., pg. 27.
- 86 Ibid., pg. 32.
- 87 Ibid., pgs. 77 to 78. This planning tool is presented in much greater detail in the "JDACC Air Campaign Planning Handbook," pgs. 77 to 91.
- 88 Ibid., pg. 32.
- 89 Ibid., pg. 37.
- 90 Ibid., pg. 39.
- 91 Ibid.
- 92 Ibid., pg. 40.
- 93 The Air Campaign, pg. 9; JFACC Primer, pg. 23; AFSC Pub 2, pg. 6-3; and Joint Pub 3-0, pg. III-27.
- 94 "JDACC Air Campaign Planning Handbook," pg. 5.
- 95 JFACC Primer, pg. 20.
- 96 "JDACC Air Campaign Planning Handbook," pg. 9.
- 97 Joseph Glatthaar, Partners in Command: The Relationships Between Leaders in the Civil War (New York: The Free Press, 1994), pgs. 163-191 and John Milligan, Gunboats Down the Mississippi (Annapolis: United States Naval Institute, 1965), pgs. 96-180. These two sources provide an interesting review of the Vicksburg campaign and the special relationship between Admiral Porter and General Grant.

98 Mark Adkin, Urgent Fury: The Battle for Grenada (Lexington: Lexington Books, 1989), pgs 1-342. This book provides an interesting perspective of the problems of joint and coalition campaigns. The author, serving in the British Army at the time, provides a non-American perspective on warfighting within the context of a campaign.

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