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THESIS

BEYOND SURPRISE:
A CYBERNETIC APPROACH TO
SPECIAL OPERATIONS

by

James O. Johnson

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Thesis Advisor: John Arquilla

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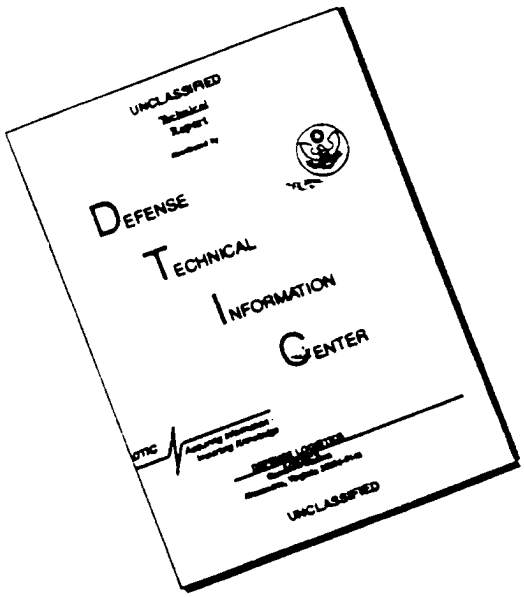

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Special operations, which generally employ small units against numerically superior forces, are exceptionally vulnerable to the frictions of war. Because the success of special operations is often of critical political or strategic importance, their degree of dependability must be as high as possible. Toward that end, this study develops a cybernetic approach to special operations. The central element of this study is the deliniation of a "cybernetic advantage," which amounts to a relative differential in the speed, accuracy and effectiveness of implementation of decisions made by opposing commanders, and the efficiency of conversion of combat potential to combat power.

Surprise is an important element in the conduct of all types of warfare and is generally considered to be critical to the success of special operations. Yet history is replete with examples of special operations that have been successful without surprise. The cybernetic approach, which draws from the classic theory of control through feedback, provides an explanation for the success of these operations. Additionally, the model based on this theory attempts to operationalize the tenets of the cybernetic approach in a manner that can be utilized as a tool for planning and analysis.

This study proposes that a small force can achieve and maintain relative superiority as long as a cybernetic advantage is maintained. Furthermore, the study proposes that the cybernetic approach, when employed in conjunction with other principles of special operations, can act as a force multiplier. This approach can, in theory, be employed to some degree by any size force at any level of warfare. However, special operations forces are especially suited for the use of this tool.

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BEYOND SURPRISE:
A CYBERNETIC APPROACH
TO SPECIAL OPERATIONS

James O. Johnson
Lieutenant, United States Navy
B.S., United States Naval Academy, 1990

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Author: _____
James O. Johnson

Approved by: _____
John Arquilla, Thesis Advisor

_____
Gordon H. McCormick, Second Reader

_____
Frank Teti, Chairman
Department of National Security Affairs

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

Surprise has long been considered critical to the success of special operations. This study questions the robustness of the advantages gained through surprise, and even the necessity of surprise in the calculus of special operations. The study develops a cybernetic approach which postulates that a small force can achieve and maintain relative superiority for extended periods, with or without the benefits of surprise, by targeting critical nodes of vulnerability, which allow the force to operate within the enemy's decision loop and facilitates the preservation of relative advnatages. The cybernetically derived advantage amounts to the relative differential in the speed and effectiveness of implementation of the commands of opposing commanders. Additionally, the study argues that the concept of relative superiority and the cybernetic approach should be applicable to any form of force interaction, but limits the scope of investigation to the consideration of these ideas as they apply to special opertions.

Once the tenets of the cybernetic approach are established, the study develops a model that can be used to apply the cybernetic approach to operations and advances five hypotheses which are subsequently tested against historical cases. The hypotheses are as follows.

Hypothesis 1: Surprise is an important, but non-critical element in the success of special operations.

Hypothesis 2: A relative advantage can be gained over the enemy, regardless of whether surprise is a factor, by employing a cybernetic approach in order to operate within the enemy's decision loop.

Hypothesis 3.1: Through the employment of a cybernetic approach, a small force can maintain relative superiority over a stronger force for extended periods of time.

Hypothesis 3.2: In utilizing the cybernetic approach, the duration of the operation is of much less importance that the action-reaction differential between two forces involved in a force-on-force interaction.

Hypothesis 4: While the cybernetic approach has the capability to operate independent of other elements that can lead to successful operations, it can also be used in conjunction with these elements and provides a significant force multiplier in this role.

Hypothesis 5: Special operations forces have intrinsic qualities that suit them well to employ the cybernetic approach.

The historical cases examined are: the ranger raid on St. Francis in 1759, the actions of Thomas Cochrane along the Languedoc coast in 1809, the attempt to liberate the POW camp near Hammelburg in 1945, and the Paitilla Airport raid in 1989. The cases selected for this work, which are intended to be illustrative in nature, were conducted by several different countries, span more than two centuries, and consider various types of operations including littoral and land-based opertions. Some of the operations were conducted independently, while others were elements of larger coordinated operations. Selection of the cases across a broad historical period illustrates the fact that the use of a cybernetic approach is not limited to a technologically advanced period, and highlights the relatively unchanging nature of close combat. The variety of operations illustrates the universal applicability of the approach. Additionally, some of the cases identify limitations that impact onthe utility of the approach.

The hypotheses tested in the case studies were generally confirmed. The first hypothesis, that surprise is an important, but non-critical element in the calculus of special operations success, was clearly illustrated by all of the cases. None of the successful cases achieved strategic or significant tactical surprise against the foe, while the Hammelburg mission achieved both strategic and tactical surprise and still ended in failure. The second hypothesis, that through the employment of a cybernetic approach, a small force can maintain relative superiority over a stronger force for extended periods and that the duration of the operation is of less importance than the action reaction differential between the two forces, was strongly supported by the actions of Major Rogers, Lord Cochrane, and the US Navy SEALs at Paitilla Airport. The cases of Rogers and Cochrane support the hypothesis because they were extended operations in which comparatively small forces maintained

relative superiority over potentially superior forces for extended periods of time. The Paitilla raid also illustrated the validity of the hypothesis but does so in an inverse manner. In this case, relative superiority changed hands twice within a few minutes. Regardless of the duration of the operations, the cybernetic approach employed by the commanders allowed them either to maintain or regain relative superiority during the critical portions of the operations.

The third hypothesis, concerning the capability of the cybernetic approach to be employed in conjunction with other elements, proved to be correct in that the cybernetic approach continued to be effective long after the advantages of the other elements diminished. However, it was also evident that the employment of the cybernetic approach is often achieved through the use of other stratagems. The cybernetic approach allows for the effectiveness of these stratagems to be maximized by employing them in the most efficient manner. In this case, it would appear that the latter portion of the hypothesis provides the opportunity to form a more accurate assessment of the robustness of the cybernetic approach.

The final hypothesis, concerning the universality of the approach and the intrinsic qualities of special operations forces that make them more likely to succeed in such an approach, held true throughout the cases. While all of the operations examined were not carried out by what would be considered to be special operations forces by modern standards, the forces considered fit the definition used herein in that they were special in their day. Additionally, the forces examined possessed some common traits that are indicative of modern SOF and facilitated the use of the cybernetic approach. These common qualities include less hierarchical organizational structure, shorter lines of communication, greater autonomy of the tactical commander when compared with the conventional forces, high levels of cohesion within the force, thorough understanding of the commander's intent by the operators, and the integration of support elements into the operations.

The operational model presented in this work was intended as a non-rigid tool for operation planning and post operational analysis. The tool is non-rigid in that it does not

represent a fixed formula for success. Rather, it represents a basic framework to guide and spur the thoughts of planners and to assist commanders in developing lessons learned from past operations. The model is divided into three phases, planning and rehearsal, execution, and post-operational. The planning phase includes such actions as locating critical points of vulnerability and determining means of exploiting these points, as well as incorporating these elements into the operational plan. Rehearsal includes refinement of the plan, consideration of foreseeable contingencies, and repetitive practice for execution. The execution of the plan is the fruit cultivated during planning and rehearsal. The post-operational phase amounts to debriefing and critique of the operation and provides lessons learned for integration into follow-on operations.

I. INTRODUCTION

The concepts laid out in this thesis and the theory built upon them are applicable to a broad range of situations, from warfare to the political arena and the marketplace. The scope of this work will be limited to the consideration of the theory as it applies to military special operations at the tactical and lower operational levels. The work focuses on special operations which are often critical to the achievement of strategic political and military goals. Because of this importance, the chances for their success must be made as high as possible. Therefore, any and all measures that can be employed to increase the likelihood of special operations success must be thoroughly investigated, tested, and where applicable, implemented.

The first chapter examines the role given to surprise, often thought to be the key element in special operations by various military theorists. The discussion of surprise will be followed by a brief survey of the terms that are central to the development and testing of an alternative approach to special operations, one that looks "beyond surprise" for the key to success. The second chapter will provide a discussion of pertinent background theory, including communications, command and control, combat and decision theories, while the third chapter will develop the concept of a cybernetic approach, testable hypotheses and an operational model.

The crux of the cybernetic approach lies in the idea that surprise is an important, but non-critical element in the success of special operations. A cybernetic approach, as presented herein, allows for the continuation and successful conclusion of a special

operation, regardless of whether surprise was employed. The reason a cybernetic approach can allow a special operations force to prevail without surprise, is that all force-on-force operations are interactive, iterated processes in which the superior position of one force exists only in relation to the opposing force. In this process, shock and surprise are subject to the deleterious effects of time. A cybernetic approach, on the other hand, often creates a relative advantage, defined in terms of the speed, accuracy, and effectiveness of the decision making and implementation processes in relation to the corresponding processes of the opposing force. Essentially, this amounts to operating within the "decision loop" of the opposing force. For the employment of this tool, the duration of the operation is much less important than the relative reaction times of the opposing forces.

The third chapter of this study will develop a model that can be used to apply the cybernetic approach to operations, and advance the hypotheses that are to be tested. Chapters IV through VIII will present and analyze historical case studies with respect to the hypotheses. The final chapter will consist of a concluding discussion of the utility of the approach; and will provide recommendations for employment of the model as a tool for planning and analysis.

A. STRATEGIC THOUGHT AND SURPRISE

There have been many theories of warfare, seeking either to find ways to avoid war, or to define the necessary elements that will bring about victory once hostilities have begun. The set of elements is often called the "principles of war," even though they often do not

prescribe any series of causal relationships. These principles, or "maxims,"[1] are abstract tools designed to assist the commander in planning and executing operations. There have been numerous efforts to create models that bring these principles together to be employed by commanders during the planning and execution of military operations. Most, if not all, of the theories consider the effects of surprise on the outcome of battle.[2] Some concentrate on surprise level, others at the operational or tactical levels.

In order to examine the role of surprise in special operations, it is necessary to identify the relevant analytic parameters. Those used in this work concern mission duration and type. The options for duration are short-term or protracted operations, while mission types are divided into commando and unconventional mission groups.[3] In this fashion, the effects and levels of surprise can be evaluated in four categories of options: 1) short-term commando, 2) protracted commando, 3)short-term unconventional, and 4) protracted unconventional. The dimensions of surprise to be evaluated are broken down into strategic

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[1]Henry Ecles, *Military Concepts and Philosophy*, (New Brunswick: Rutgers University Press, 1965), p. 108-113.

[2]John I. Alger, *The Quest for Victory: The History of the Principles of War*, (Westport: Greenwood Press, 1982). Alger notes that surprise, along with mass, objective and economy of force "emerge as being regarded in a manner that sets them in a class above the other principles" (189).

[3]The term commando, as used in this instance, was first heard by the author during a lecture given by Dr. Christopher Lamb who is the Director of Policy Planning in the Office of the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict. Dr. Lamb divided special operations into two broad categories, commando and unconventional. Commando missions include direct action and special reconnaissance type missions, while unconventional warrior missions include advisory and humanitarian style missions.

and tactical elements, along with other sub-categories of surprise such as psychological, temporal, spatial, technological, doctrinal and informational.

This thesis, while accepting that strategic surprise, initiating an attack on an enemy that is unaware of the mobilization or deployment of forces in dispositions consistent with a plan to attack,[4] is important to short-term commando operations, asserts that it is not essential to their success. One example of this is the German raid conducted on the fortress at Eben Emael.[5] When the gliders crossed the border, air warning posts saw them and should have destroyed any hopes the Germans had of achieving strategic surprise. However, they were able to retain some degree of strategic surprise, because they were using gliders in an original manner. During later operations, such as the liberation of Mussolini, the use of gliders did not add to the achievement of strategic surprise. In the Mussolini operation, the German force was successful without strategic surpirse.

While tactical surprise, the undiscovered conduct of the initial movements of an attack,[6] is also of great importance to the success of these operations, it is not singularly critical. In the German airborne assault on Crete,[7] both strategic and tactical surprise were

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[4]Richard K. Betts *Surprise Attack: Lessons for Defense Planning*, (Washington: The Brookings Institute, 1982) p. ix, provides the basis for this definition.

[5]William McRaven, *SPEC OPS Case Studies in Special Operations Warfare: Theory and Practice*, (Novato: Presidio Press, 1995), p. 29-69.The raid on the fortress at Eben Emael is used as one of the case studies in McRaven's work. Another thorough account of this raid is contained in Cajus Bekker, *The Luftwaffe War Diaries,* (New York: Doubleday, 1968), p. 93-100.

[6]Betts, p. ix.

[7]Bekker, p. 184.

lost before the operation began, yet the operation continued and the island was conquered. In this case, the Germans were able to persevere, because they had other advantages over the defenders of the island, such as air superiority and reenforcement capability. Eventually, due to the robustness of their plan, the German forces were able to shift the balance in their favor. Regardless of whether this was considered to be a Pyrrhic victory, the case illustrates the point that surprise is not an indispensable element in the conduct of this type operation.

In protracted commando operations, strategic surprise is of less importance than it is for short-term operations. Strategic surprise may be useful in the first or second missions during a protracted operation, but its value will diminish after it is achieved the first time because the opposition will know that a special operations campaign is underway. Tactical surprise can be achieved, in varying degrees, throughout a camppaign. However, it will grow increasingly difficult to achieve. Additionally, the duration and magnitude of the advantage gained by surprise will continually decrease as the protracted operation continues. Tactical surprise can continue to be a factor in protracted commando operations, such as the Special Boat Squadron operations in the Aegean during World War Two, providing different methods are used to achieve it.

The operations of the Special Boat Squadron "Force X" also exemplify the diminishing nature of the advantages gained by surprise. The initial raiding operations that were carried out in the Aegean, such as the raids on Mikinos and Ios, took the enemy almost entirely by surprise. On Mikinos, "everybody knew of the arrival of the *Inglesi* with the

exception of the Germans."[8] During this raid, the majority of the German garrison was found sleeping. Even so, some of the Germans recovered from their disadvantage after they "had had time to collect their wits. They barricaded themselves in a single room whilst one of their number threw grenades down the stairs."[9] The British raiders were eventually successful in convincing the German soldiers to surrender, but the advantages gained by surprise had long been lost by that time. Force X was able to continue to enjoy the advantages of surprise in their raiding missions for a short period. However, the extended duration of the advantages "must be attributed to the enemy's practice of censoring all news of [the] raids, with the results that all who had not suffered were unaware of the disasters that might come with the night."[10]

Eventually, the raids resulted in "the distribution of large garrisons of German mountain troops throughout the Cyclades."[11] Following this distribution of forces, another raid was attempted on the island of Paros. In this raid, "the main attack failed - the alarm being given almost at once by some unusually alert sentries."[12] As the raiding operations continued, the British forces were able to maintain a lesser form of tactical surprise by altering the methods they used in executing the operations. An example is the operation on

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[8]John Lodwick, *Raiders From the Sea*,(London: Methuan, 1947), p. 139.

[9]*Ibid.*, p. 140.

[10]*Ibid.*, p. 142.

[11]*Ibid.*, p. 144.

[12]*Ibid.*, p. 144.

the island of Naxos, in which the raiders coopted local guerrillas, who assisted them in altering the means of assault, and whose participation increased the size of the assault force.

Unconventional operations, whether short-term or protracted, are less dependent on surprise than are commando operations. In many cases, surprise is not a factor for these operations. Some examples of this type mission are foreign internal defense, where unconventional operations personnel are present at the request of a foreign government and insurgency operations, where personnel are emplaced in enemy territory to train and control guerrillas. The effect of surprise in these operations is more a result of the methods and doctrine taught by the unconventional warriors to the forces conducting insurgent or other type operations. In this sense, the unconventional warrior effects the use of surprise in follow on commando operations.

Thus, one can see that surprise is an important, but not always essential, element in both short-term and protracted commando operations. The element of surprise is one factor that contributes to the achievement of a position that is relatively superior vis a vis the opposing force. Other factors, such as operating in a manner that limits thye enemy's options, also contribute to the achievement of a relative advantage.

Among strategic theorists, Jomini and Clausewitz believed that, while surprise and deception were important elements in war, tactical surprise was of little consequence: "it was practically impossible to achieve surprise on the strategic and higher operational levels."[13] Sun Tzu, on the other hand, believed that deception (a means of achieving surprise) was the

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[13]Michael Handel, *Masters of War: Sun Tzu, Clausewitz and Jomini*, (London: Frank Cass & Co., 1992), p. 107.

key to success, because it "persuades the enemy to concentrate his forces in the wrong places."[14]

Clausewitz and Jomini both look at the same period, and though their views share little common ground, they both concentrate on the Napoleonic style of warfare. One of the principal axioms for victory from this period, "the concentration of superior force at the decisive point"[15] in a climactic battle, is well suited to war fought with mass armies accustomed to fighting in fixed battles. The writings of Sun Tzu were penned a century and a half after Confucius, about two thousand years ago. During this period, the nature of Chinese warfare shifted from set-piece tactical battles fought according to a rigidly observed chivalrous code between feudal nobles, to professional soldiers organized under commands, complete with general staffs, that fought strategic campaigns of maneuver governed primarily by pragmatic constraints.[16] Sun Tzu's concentration on the importance of surprise is more applicable to a mobile style of warfare that facilitates rapid maneuver as well as concentration of force. The dispersed, mobile style of warfare espoused by Sun Tzu also

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[14]*Ibid.*, p. 102.

[15]*Ibid.*, p. 106. Though the quote is taken from Clausewitz' work, Jomini was the more fervent believer in the importance of the "decisive point."

[16]Paraphrase of Whaley(1969). Additionally, Whaley notes that the original title of the work was *Sun Tzu Ping Fa* which translates to *The Military Doctrine of Sun Tzu.* The character *Fa* means "now as in Sun Tzu's time" and would more appropriately be translated to doctrine or law than art.

creates an increased role for command, control, communications and intelligence. Consequently, Sun Tzu places a greater emphasis on these areas than Clausewitz or Jomini.[17]

Richard K. Betts has analyzed the issue of surprise in warfare quite systematically. Betts' approach stems from two ideas: first, "if an enemy uses surprise in launching an attack, even very impressive forces may be insufficient for successful defense because surprise can neutralize much of their capability;"[18] and second, "that nations often fall victim to surprise attack despite ample warning."[19] In his approach, Betts defines "three phases of warning: political, strategic and tactical...Political warning comes from the increase in tension that raises the possibility that deterrence can fail...Strategic warning comes from indications that the enemy is mobilizing and deploying forces in dispositions consistent with a plan to attack...Tactical warning is the detection of the initial movements of the attack itself, before combat is joined."[20] Additionally, Betts notes that "surprise is a force multiplier [that can] keep the victim reeling when his plans dictate that he should be reacting, and it prevents him from using his capabilities efficiently while the attacker exploits his own to the maximum."[21] This thesis builds on Betts approach to surprise.

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[17]Alger (1982) provides an in depth examination of the principles of war throughout history.

[18]Betts, p. ix.

[19]*Ibid.*, p. ix.

[20]*Ibid.*, p. 4-5.

[21]*Ibid.*, p. 5.

Another strategic theorist who has remained obscure despite having demonstrated a "sweeping command of broad concepts"[22] of military thought is Raoul Castex. Castex, a French naval officer during the first half of the twentieth century, considered surprise to be a significant factor in battle, but did not consider it critical for success. Castex presents his thoughts on this matter in the concept of *strategic manoeuvre*, which he defines as "a method used by strategy to improve the conditions of the struggle, to multiply the return on her efforts, and to obtain the greatest results, whether in the duel between the principal forces themselves or to the benefit of particularly important nonmaritime requirements."[23] Castex expands this definition by suggesting that "to manoeuvre is to move intelligently in order to create a favorable situation."[24] Essentially, Castex' concept of manouvre is the "combination of efforts to create an opportunity to confront (the enemy) under favorable circumstances."[25]

The manoeuvre is directed at what Castex calls the principal objective, which is a point that may change with each situation, and brings about an upset in the balance of the situation. Castex's concepts of manoeuvre, principal objective, and initiative in operations do not necessarily involve the massing of forces at a weak point in the enemy defenses, as do the Clausewitzian and Jominian concepts. Castex's concept essentially calls for the

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[22]John Arquilla, Review of Castex' work, *Naval War College Review*, Autumn 1994, p. 114.

[23]Raoul Castex, translated by Eugina C. Kiesling, *Strategic Theories*, (Annapolis: Naval Institute Press, 1994), p. 101.

[24]*Ibid.*, p. 102.

[25]Arquilla, p. 115.

localization and exploitation of critical enemy nodes which will shift the balance of the engagement in the desired direction. In essence, "manoeuvre attempts to alter or control the course of events, to dominate fate rather than to yield to it."[26] One of the central elements of the manouvre concept is the achievement of "dominance of the information spectrum...An advantage in this area would be a substantial force multiplier, particularly when employed in conjunction with tactical surprise."[27]

Barton Whaley, in his work *Stratagem: Deception and Surprise in War*, also considers the various principles of war, but concentrates his efforts on deception and surprise. For Whaley, deception and surprise are means of achieving an information advantage. In his discussion, Whaley points out that the great strategists of history provide a significant amount of wisdom for the commander, but do not go far enough in their work. The next logical step, according to Whaley, is to design a working model that incorporates the wisdom of the classical strategists. This type model should prove useful to the commander as a tool both in planning and executing military operations. Whaley attempts to take this step by presenting a model for the employment of *stratagems in war*. The goal of his model is to create a "simple procedure for designing political-military operations in such a way as to substantially increase the chance of gaining surprise."[28] In order to achieve this goal, Whaley's model is designed to do three things. The first is to insure that the target

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[26]Castex, p. 105.

[27]Arquilla, p. 116.

[28]Whaley, p. 139.

is faced with an ambiguous situation. Second, the model requires that the target be presented with alternative solutions to the ambiguous situation. Finally, the target must be convinced to select the desired solution to the situation. The end result is a foe that "chooses decisively and wrong."[29]

Despite the differences in the styles of warfare considered, there are some commonalities in the views of the theorists. One common point is a need to create a decisive advantage over the enemy at a critical point in the battle in order to be victorious. This concept is applied to special operations[30] by William McRaven in *SPEC OPS Case Studies in Special Operations Warfare: Theory and Practice.*[31] In this work, McRaven calls the

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[29]John VanVleet, *Tactical Military Deception*, (MS Thesis, Naval Postgraduate School, Monterey, CA September 1985), p. 223.

[30]McRaven limits his working definition of special operations to those operations commonly considered commando operations. As presented, McRaven's refined definition is "operations conducted by forces specially trained, equipped, and supported for a specific target whose destruction, elimination, or in the case of hostages, the rescue of, is a political or military imperative."(McRaven, 16) The definition presented in the *Doctrine for Joint Special Operations* states that special operations are "operations conducted by specially organized, trained, and equipped military and paramilitary forces to achieve military, political, economic, or psychological objectives by unconventional military means in hostile, denied, or politically sensitive areas. These operations are conducted during peacetime competition, conflict, and war, independently or in coordination with operations of conventional, non-special forces. Political-military considerations frequently shape special operations, requiring clandestine, covert, or low visibility techniques and oversight at the national level. Special operations differ from conventional operations in degree of physical and political risk, operational techniques, mode of employment, independence from friendly support, and dependence on detailed operational intelligence and indigenous assets."

[31]William McRaven, *SPEC OPS Case Studies in Special Operations Warfare: Theory and Practice*, (Novato: Presidio Press, 1995).

advantage relative superiority.[32] McRaven proposes that relative superiority, which is gained by surprise and maintained by speed and purpose, is unique to small forces. Relative superiority is a function of what McRaven calls the "six principles of special operations." His principles, and their manner of employment, are presented in Figure 1. The special operation that fails to achieve these principles, to some extent, is almost always doomed to failure. While this theory explains much concerning the ability of a numerically inferior force to overcome a force with significant advantages, it does not explain why some special operations succeed when surprise was not a factor, or when surprise was lost prior to the start of the operation.

To begin an examination of this dilemma, I refer to McRaven's concept of relative superiority. McRaven describes this concept as "the pivotal movement in an engagement"[33] in which one force achieves "a decisive advantage over the enemy."[34] He also states that this advantage must be sustained in order to achieve victory and once lost, the advantage is difficult to regain. Furthermore, McRaven indicates that "once you have overcome the last obstacle the probability of success strongly outweighs the probability of failure and *relative*

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[32]The concept of relative superiority will be discussed in detail in the ***Definitions*** section of this chapter. At this point it is worth noting that relative superiority is a result of the comparative expression of combat power of opposing military forces. Combat power is not strictly a function of the size of the units involved. Combat power results from elements such as size, firepower, mobility, initiative, and moral superiority. Understanding the concepts of relative superiority and combat power are essential to comprehending the role of a cybernetic approach to special operations.

[33]McRaven, p. 6.

[34]*Ibid.*, p. 6.

superiority is gained."[35] McRaven portrayed his concept in a "Relative Superiority Graph."[36] Figure 2 depicts this graph.

In this graph, the X-axis represents time, the Y-axis is the probability of mission completion. The intersection of the axes is the Point of Vulnerability (PV). The PV is defined as the point in a mission when the attacking force reaches the enemy's first line of defense. At this point, the frictions of war begin to impinge on the success of the mission. The location of the PV is somewhat arbitrary, but its existence is significant. Though the frictions of war can effect a mission during the planning phase, McRaven elected to define the PV as an aspect of the engagement phase. The area of vulnerability (AV) is a function of mission completion over time. The longer it takes to reach relative superiority, the greater will be the AV, and the greater the impact of the frictions of war. The graphic representation also indicates the presence of critical events leading up to the achievement of relative superiority.[37]

This thesis expands on McRaven's basic concept of relative superiority by making two changes. The first change alters the model such that it accounts for the interactive nature of combat. The second change allows the concept to account for the iterated nature of force-on-force interaction. The rationale behind McRaven's concept is sound, in that the closer an operation comes to completion and the more obstacles that are overcome, the more likely it

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[35]*Ibid.*, p. 6.

[36]*Ibid.*, p. 9.

[37]*Ibid.*, p. 10.

is that the operation will be successful. However, the term relative superiority implies that one force is at an advantage vis a vis the opposing force. Basing the concept on the relative positioning of forces severely limits the utility of the concept as a tool for planning special operations, unless it accounts for the relationship that exists between the forces involved. In a situation involving forces diametrically opposed to one another that are actively seeking to defeat the opposing force, there is no fixed number of obstacles that must be overcome prior to achieving relative superiority. Rather, the special operations mission, or any other force-on-force action, is an iterated, interactive process. Relative superiority is a dynamic function of that process and must be explained from that viewpoint. In order to make the concept useful to the planner, some means must be found to incorporate the actions and capabilities of both forces throughout the interaction. Counterposing the forces, in the manner described above, brings to light the temporary nature of any advantage gained by surprise or by any other means. This study develops an alternative approach to victory in combat by examining a means of gaining and maintaining relative superiority over an adversary in spite of the loss of surprise.

The idea that surprise is an essential element in the successful special operation equation does not hold true historically. Numerous examples throughout history bear out the fact that a numerically inferior force can defeat a numerically superior force, even when the advantages of surprise are not available. The historic cases used in this study illustrate this phenomenon. Even though surprise had "been identified as one of the few basic principles

of war (and is) regarded in a manner that sets (it) in a class above the other principles,"[38] I propose that, while surprise can add greatly to the achievement of relative superiority, it is not necessary for the achievement of success in special operations. Furthermore, I propose that even when surprise is gained, its benefits are temporary.

When executing an operation, the attacking force has an initial advantage, because they have what Castex refers to as the "initiative of operations,"[39] in that they control when the first move will be made and know, in full, the plan that is to be executed. Conversely, the defending force, to some degree, is uncertain of the threat it faces and nearly always begins the action in a reactive posture. One element that is present throughout the operation is friction. While friction effects both the capabilities of the assaulting force and the defending force throughout the operation, the assault force is more likely to be adversely effected prior to the initiation of action than the defending force. This difference results from the fact that the assault force must actively move into a position that facilitates the assault, while the defending force need only maintain or enhance an essentially static posture.

For a special operations force, this early friction may begin well before enemy contact is made, and may include such problems as equipment malfunctions or environmental factors. Because the defending force possesses greater combat potential, the advantage gained by surprise or initiative will continue to diminish after initial contact, unless some action is taken to extend the longevity of the advantage. The initial contact with

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[38]Alger, p. 189.

[39]Castex, p. 105.

the enemy can be seen as an increase in friction. Because the enemy force is normally stronger than the assault force, lengthening the time of the operation will be to the advantage of the defending force. Therefore, as the operation proceeds, the relative superiority of the assault force will continue to diminish until it reaches a critical point where there is no advantage. From that point on, the defending force will have relative superiority, unless action is taken to reverse the trend. The likelihood of mission success will decrease rapidly if the mission is not completed before the critical point is reached.

Special operations, which often employ small forces against numerically superior forces, are exceptionally vulnerable to the frictions of war in that these forces have less ability to absorb losses than numerically larger forces. Furthermore, these "fragile" operations invariably have high level strategic or political linkages when compared to conventional operations.[40] Because the success of special operations is often so important, the degree of dependability of the operations must be as high as possible. One manner of increasing the chance of success, is to decrease the dependency of special operations success on short-lived advantages. Surprise is one method that allows a special operations force to gain relative superiority over the enemy. However, if the force does not capitalize on its relative superiority, the advantage will be lost to the frictions of war. In any special operation, relative superiority is a wasting asset. The half-life of this asset can be greatly

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[40]The advantages and disadvantages of the high-level linkages of special operations are discussed in both Eliot Cohen's *Commandos and Politicians: Elite Military Units in Modern Democracies*, (Harvard: Center for International Affairs, 1978), and Ross Kelly's *Special Operations and National Purpose*, (Lexington: Lexington Books, 1989).

extended by instituting measures to make special operations more robust when surprise is lost.

In order to make special operations more robust, means must be found which allow the force to maintain relative superiority for longer periods. Relative superiority can be extended if the force is able to do three things: 1) locate and exploit the critical vulnerabilities of the opposing force, 2) reduce the effects of the frictions of war in their own force or increase the cohesiveness of the force, and 3) limit the enemy's ability to respond effectively. In an elementary fashion, the conscious consideration of these steps throughout the operation amounts to the cybernetic approach, that is, an approach that leads to control through feedback from key indicators. The cumulative effect of this approach is to provide the force with a cybernetic advantage.

B. DEFINITIONS

Before progressing further into the investigation and testing of the possible benefits of using a cybernetic approach as a tool to achieve and maintain relative superiority, the relevant terms and concepts must be defined. The working definitions presented in this section will be used throughout the remainder of this study.

1. Special Operations

The *Doctrine for Joint Special Operations* defines special operations as "operations conducted by specially organized, trained, and equipped military and paramilitary forces to achieve military, political, economic, or psychological objectives by unconventional military means in hostile, denied, or politically sensitive areas. These operations are conducted

during peacetime competition, conflict, and war, independently or in coordination with operations of conventional, non-special forces. Political-military considerations frequently shape special operations, requiring clandestine, covert, or low visibility techniques and oversight at the national level. Special operations differ from conventional operation in degree of physical and political risk, operational techniques, mode of employment, independence from friendly support, and dependence on detailed operational intelligence and indigenous assets."[41] William McRaven limits his working definition to "operations conducted by forces specially trained, equipped, and supported for a specific target whose destruction, elimination, or in the case of hostages, the rescue of, is a political or military imperative."[42] McRaven's definition refers to those operations commonly considered to be "commando"[43] operations. While the operations considered in this thesis are all commando style, direct action missions, the principle concept of a cybernetic advantage applies to all special operations that involve direct interaction with an enemy in deadly competition, regardless of whether or not actual combat takes place. Therefore, the working definition for this thesis will be: *a special operation is an operation conducted by forces that are trained, equipped and supported for a specific target whose destruction, elimination, or in the case of hostages, the rescue of, is linked to the highest political or military goals.* It should further be noted that the extent of training given to forces that conduct special

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[41]*Doctrine for Joint Special Operaitons*, JOINTPUB 3-05, (Washington: Office of the Chairman of the Joint Chiefs of Staff), p. GL-20.

[42]McRaven, p. 16.

[43]Again using the terms coined by Dr Lamb.

operations has varied greatly throughout history. In many cases, special operations have been conducted by conventional forces, and often using conventional tactics. The case of Thomas Cochrane and his exploits along the Languedoc coast[44] exemplifies a special operation, in that the force involved was small, the operation was highly leveraged, and the results of the operation directly affected the strategic level of the Peninsular War. However, this operation was conducted by general purpose forces with only rudimentary training in the type of operation in which they were involved. Regardless of their limited training, these forces were able to succeed in their endeavors, because their commander utilized innovative tactics and a dependable intelligence system to develop and maintain an advantage over the enemy.

Additionally, there have been other cases where regular forces have used unconventional methods to accomplish missions that were linked to the highest political or military goals. A classic example of this type operation is the fictional account of the capture of the city of Troy.[45] The use of the wooden horse in the capture of the city was not a conventional means of placing troops inside a city. The troops that were inside the horse, while they were a select group, had received no special training.

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[44]A concise account of the exploits of Cochrane are recorded in Ian Grimble's work, *The Sea Wolf: The Life of Admiral Cochrane*(London: Blonde and Briggs, 1978).

[45]An account of the wooden horse and the capture of the city is provided in Robert Graves' work *The Siege and Fall of Troy*, (New York: Dell Publishers, 1965).

2. Friction

Clausewitz defines friction as "the force that makes the apparently easy so difficult."[46] That force is a sum of difficulties which accumulate and "lower the general level of performance, so that one always falls far short of the intended goal."[47] In the discussion of friction as a component of relative superiority, friction can be considered to be a negative force, in that it detracts from the potency of a unit. Similarly, friction can be considered to be a physical element for the purposes of considering its effects on the combat power and effectiveness of a unit. When considered within the framework of a theory of combat, friction is defined as "lost or wasted energy that occurs during element-action-element activity not due to resistance."[48] In this framework, "actions that attenuate the effects of enemy actions"[49] are given the designation of resistance. Friction and resistance account for the difference between a unit's "designed potential"[50] and the "combat work"[51] performed by that unit. The components of friction and resistance are numerous and include both physical

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[46]Carl von Clausewitz, *On War*, eds. Michael Howard and Peter Paret. (Princeton: Princeton University Press, 1976), p. 121.

[47]*Ibid.*, p. 119.

[48]Hughes, Wayne P. Jr., "Combat Science: An Organizing Study", unpublished version, 01 November 1993, p. A-4.

[49]*Ibid.*, p. A-5.

[50]Designed potential, as indicated in Wayne P. Hughes, Jr. "Command and Control Within the Framework of a Theory of Combat," is the notional capacity of a force to achieve combat results under optimal circumstances.

[51]Hughes, "Combat Science," p. A-6, The difference between the initial and resultant states of enemy elements caused by combat activity in a period of time.

and metaphysical aspects. Some of the physical elements are the actions of the enemy, technological restrictions, environmental constraints, and availability of accurate intelligence. Metaphysical elements of friction include individual motivations, cognitive limitations, biases, perceptions, and chance. For the purposes of this study, the term friction will be used to denote both the forces considered above as friction and resistance[52] and thus can be defined as ***the force that results from the cumulative effects of those elements which detract from the ability of a unit to carry out its mission.***

3. Cohesion

Cohesion has been defined as "the bonding together of members of an organization/unit in such a way as to sustain their will and commitment to each other, their unit, and its mission."[53] Colonel William Henderson referred to cohesion as "the human element in warfare"[54] and that, in order to examine cohesion, one "must consider the following areas: the overall organizational structure,...the 'human element';...and the influence of the leader on the small group and the resulting commitment of the individual soldier toward achieving army goals."[55] Colonel Henderson's version of cohesion, which has

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[52]Friction will be considered in both its internal and external components. However, these components will be accredited as to moving toward the same end and will therefore be understood as elements of the same force.

[53]John Johns, *et al.*, *Cohesion in the US Military*, (Washington: National Defense University Press, 1984), p. 9.

[54]William Henderson, *Cohesion: The Human Element in Combat*, (Washington: National Defense University, 1985), p. 2.

[55]*Ibid.*, p. 9.

also "been referred to in such terms as esprit de corps, group morale, and elan,"[56] focuses on those elements that bind a unit together in combat. His version represents only one portion of the concept used in this work. The concept used herein refers to ***the overall ability of a unit to continue prosecution of its mission in the face of friction*** and incorporates such elements as organizational structure, doctrine, information systems structure and predisposition of leadership, as well as the human element. In most cases, the human element cannot be altered in a manner that will affect the outcome of a tactical engagement because these factors deal with the individual makeup of the individuals involved. However, considering the human element in the cybernetic approach can increase the options available to the commander in achieving the cybernetic advantage.

The concept of cohesion, as it applies to the operation of units in combat, can generally be explained within a framework of "combat functions" and "combat processes."[57] A combat function is the task a unit or element is assigned to perform. "Collective activities by functioning forces in a force-on-force situation are...combat processes."[58] Combat functions and processes can either be internally or externally directed. Internally directed functions and processes are designed to control and direct the actions of friendly forces, while externally directed functions and processes are directed at the "degeneration of the

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[56]*Ibid.*, p. 3.

[57]Hughes, Wayne P. Jr., "Command and Control Within a Framework of a Theory of Combat", p. 3.

[58]*Ibid.*, p. 3.

enemy's combat power."[59] Internally directed elements are those elements that contribute to the cohesiveness of a force. Externally directed elements are intended to erode the cohesiveness of the opposing force. The primary functions and processes, as presented by Wayne P. Hughes, Jr., are represented in Figure 5.[60]

This framework is intended to provide a conceptual basis for understanding cohesion and how it relates to the ability of a combat unit, particularly a special operations force, to accomplish a mission. Cohesion is one of the basic elements of the defensive component of a cybernetic approach. It is composed of disparate elements which culminate in the ability of a unit to achieve results that approach its combat potential in spite of friction. In this sense, a higher level of cohesion in a unit should indicate an increased level of dependability on the actions of that unit, while a lower level of cohesion in a unit would result in operations that are both more fragile and less dependable.

Cohesion can be increased by concentrating on the various factors that will improve resistance to friction. Some actions that can be taken to increase cohesion include designing redundancy into the operational plan, keeping the plan as simple as possible, conducting extensive rehearsals, covering all possible contingencies, utilizing the technology appropriate for the mission, maintaining a high level of operational security, both prior to and following the operation, executing the operation in an expeditious manner, limiting the threat to which

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[59]*Ibid.*, p. 3.

[60]The combat functions and processes utilized by Professor Hughes originated with The Military Conflict Institute.

the force is exposed, pursuing a cybernetic approach, and conducting operations based on sound tactics.[61]

4. Relative Superiority

In considering relative superiority in combat, William McRaven states that "relative superiority can be defined, in the context of special operations, as a condition that exists when an attacking force, generally smaller, gains a decisive advantage over a larger or well defended enemy. Once relative superiority is achieved, the attacking force is no longer at a disadvantage and has the initiative to exploit the enemy's weakness and secure victory."[62] McRaven points out that this concept should not be confused with Clausewitz' concentration of superior force at a geographically decisive point. McRaven's critical point is presented as a point in time when relative superiority shifts to side of the attackers. My proposition is based on Castex's concept of the *initiative of operations,*[63] in which the advantage always starts out on the side of the force that initiates the action, rather than something that is statically emplaced in a force based on its designed combat potential.[64] Combat operations are interactive. The advantage held by any one competitor at any time in an operation is

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[61]The idea of sound tactics is discussed in Hughes (1986). The rationale behind a sound tactic is that a tactic must be practiced extensively to be useful in combat and that since the enemy can be expected to know about anything that has been practiced very much, sound tactics must work even when the enemy is aware of them.

[62]McRaven, p. 2.

[63]Castex, p. 105.

[64]Wayne P. Hughes Jr., "Command and Control Within the Framework of a Theory of Combat." p. 2.

relative to the position and actions of the other competitors. That advantage is the result of the component elements that comprise the combat power of the units involved. In combat, the force that has relative superiority controls, to some degree, the direction and tempo of the operation. The force that has relative superiority acts in a proactive manner, while the opposing side is forced to be reactive. In the words of Colonel C. E. Callwell, "to dominate the course of operations, to hold the lead and compel the antagonist to follow suit, is the way to achieve victory."[65] ***Relative superiority then, is the differential in the sum of the combat power of two opposing units which allows the advantaged force to control the direction and tempo of the operation and to hold the initiative.***

5. Surprise

The *Doctrine for Joint Special Operations* defines surprise as "the ability to strike the enemy at a time or place, or in a manner, for which he is unprepared." William McRaven writes, "special operations forces do not generally have the luxury of attacking the enemy when, or where, he is unprepared. Such forces must attack in spite of enemy preparation. Surprise means catching the enemy off guard...In a special operation surprise is gained through deception, timing, and taking advantage of the enemy's vulnerabilities."[66] Richard Betts views surprise as both an event and a capability. With reference to the event, Betts states that "surprise occurs to the degree that the victim does not appreciate whether, when, where, or how the adversary will strike." In terms of a capability, he writes, "surprise is a

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[65]C. E. Callwell, *Small Wars: Their Principles and Practice,* (London: Harrison and Sons, 1906), p. 71.

[66]McRaven, p. 26-27.

force multiplier. It can neutralize much of the victims defense by enveloping or destroying forces at the outset. Surprise can also keep the victim reeling when his plans dictate that he should be reacting, and it prevents him from using his capabilities efficiently while the attacker exploits his own to the maximum."[67] Betts refers to the extended effects of surprise as shock. This approach to shock and surprise will be used as a foundation for the development of the cybernetic approach. The definition of surprise used in this work is as follows: ***Surprise is the ability to strike the enemy at a time or place, or in a manner, for which he is unprepared. The extent of the surprise is directly related to the degree of the enemy's unpreparedness***. The dimensions that bound the effects of surprise (strategic, operational, tactical) and the types of surpise (spatial, technological, imformational) were discussed earlier in this chapter.

6. Communication

The definition of communication is simple: ***the transfer of information between a source and a destination.*** However, the simplicity of this definition can be deceptive when applied to communications under combat conditions. The basic idea applied to combat functions and processes is also applicable when considering communications in combat operations. Within the scope of combat, there are two levels of communications: low level and high level. Low-level communications link internal combat functions and processes and apply to information flow within friendly forces. In short, low level communications amount to instructions and feedback. This type of communication allows a commander to exert

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[67]Betts, p. 4-5.

control over his forces and monitor their actions. The second level of communication is somewhat more abstract.

High-level communications do not refer to communications of higher levels of command. Rather, they refer the to signals transmitted between opposing blocs of forces, such as task forces, engaged in a force-on-force action. Another distinction between low and high level communications comes to light in considering the cybernetic approach. Low level communications essentially refer to those communications that directly affect the defensive component of the cybernetic approach, while high-level communications affect the offensive component. High-level communication is similar, in many respects, to tacit communication between diplomatic opponents. The message sent by one side is not necessarily the message received by the opponent. Even if the intended signal is received, the manner in which it is interpreted by the opponent is not certain. Part of the reason for this problem lies in the fact that the commander conducts high level communication through actions taken by his forces that are controlled and monitored by instructions and feedback. Other reasons for difficulty in high-level communications are friction and noise. Friction can cause the intended signal to be altered during transmission, while noise tends to mask the signal and prevent its efficient reception, even if it is unaltered during transmission.

Both low-level and high-level communications can be explained using a communications theory framework. Communications theory focuses on the problems and processes of transmitting data from a sender to a receiver. In its simplest form, communications theory consists of a sequential association that begins with a source, passes

through an encoder, channel, and decoder and is received at a destination. This framework is exceptionally useful in examining high level communications. The encoder transfers the message from the source language into another form that can be transmitted through the available channel or channels. In the theory of combat, the forms are functions and processes. The signal is then received and interpreted by the decoder and transferred to the destination. From the time the signal leaves the source until it is acted upon by the receiver, it is subject to noise and friction. Noise can affect the efficiency with which the message is transmitted, and is composed of the outside forces that are beyond the control of either the source or the destination. The elementary structure of the communication model is represented in Figure 6.[68]

The communications model is particularly useful in understanding the high level communications process that take place between commanders in combat. The important difference between the combat communications process and the elementary model is that the combat communications process is an interactive, iterated process. A more realistic schematic would consist of two elementary processes flowing in opposite directions.

In reality, the communications process is much more complex than that presented above. However, this model serves to provide a basic structural understanding of the communication process. In the end, the true measure of communications effectiveness is not whether or not the intended target received the signal transmitted by the source , but whether or not the transmitted signal had the desired effect on the target.

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[68]Katherine L. Herbig and Donald C. Daniel *Strategic Military Deception*, (New York: Pergamon Press, 1982). ch 3.

7. Cybernetic Process

A cybernetic process, in the most elementary sense, can be likened to a Watt mechanical governing device for steam engines. The principles and functions of this device and its application to decision making will be discussed in detail in Chapter II. The working definition, for the time being, is ***the process by which a commander or a command element of an organization perceives changes in its environment and reacts to those changes through feedback from key indices.***

II. RELEVANT THEORY

There have been many theories about how to achieve a decisive advantage in combat.[69] Perhaps the most widely known is B. H. Liddell Hart's "indirect approach." This study proposes to develop a cybernetic approach for special operations, one that fosters a kind of advantage based on the relative differential in the speed, accuracy and effectiveness of implementation of decisions made by commanders, and the resultant effects on the conversion of combat potential to combat power. The cybernetic approach draws from two bodies of theory: command and control, and decision theories. Basic communications theory, as presented in the last section, provides a framework for understanding the manner in which decision theory and command and control theory are linked. The first two sections of this chapter will present the working fundamentals of command and control theory and basic decision-making paradigms. The final sections describe, in detail, the concept of the cybernetic approach, and presents the theory and hypotheses to be tested.

A. COMMAND AND CONTROL THEORY

At the heart of the concept of a cybernetic approach are the elements of command and control. Command and Control (C2) is a term often used but seldom properly defined. Command and control can be defined as "the exercise of authority and direction by a properly designated commander over assigned or attached forces in the accomplishment of

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[69]John Alger, *The Quest for Victory: A History of the Principles of War* (Westport: Greenwood Press, 1982).

the mission."[70] In his discussion of the theory of combat, Professor Wayne P. Hughes, Jr. states that "command and control is both a function and a process. The C2 function is to organize, train, motivate, make decisions about, and direct the forces commanded...The C2 *process* alters the states, or attributes of forces."[71] The interest of this study concerns the implementation of command and control in combat operations, particularly that segment of combat operations known as special operations. In this regard, command and control will be considered in a "theory of combat."[72]

The theory of combat serves as a "structure for understanding human beings in deadly competition,"[73] and has two basic premises. "The first is that combat force exists: it is a real phenomenon. It is seen by its effects on an enemy; it produces results."[74] The results of this force are manifested in combat power. Combat power is defined as the phenomenon, which has both physical and metaphysical aspects, that creates results in combat. "The second

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[70]This is a portion of the definition presented in the Chairman of the Joint Chiefs of Staff Memorandum of Policy Number 30 (MOP-30). The full definition also includes the statement "C2 functions are performed through an arrangement of personnel, equipment, communications, computers, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission."

[71]Hughes, "Command and Control Within a Framework of a Theory of Combat", p. 4.

[72]Hughes, "Combat Science: An Organizing Study."

[73]Hughes, "Command and Control Within a Framework of a Theory of Combat", p. 1.

[74]*Ibid.*, p. 2.

premise is fundamental to the role of command in the generation of combat power. In physical science it is accepted that all phenomena can be described in terms of energy and matter, and that energy and matter may be transformed one into the other. "[75] The element that enables command to perform its role in the generation of combat power is instruction. That is to say, instruction is the medium through which command brings about the transfer of combat potential into combat power. Therefore, the source of combat power is combat potential. "Combat potential is embodied in combat forces that are capable of generating power against an enemy...combat potential is the latent capacity of individual fighting and supporting elements organized as a force capable of achieving combat results."[76]

In short, the theory of combat asserts that all things can be described in terms of energy, matter and information and that combat force is capable of existing in two forms. The latent form is combat potential, which is composed of the forces a combat unit is capable of expending. The kinetic form, combat power, is the effect of the exertion of combat forces on the enemy. The means by which command exerts control and directs the expenditure of combat power is instruction. The measured effect of combat power on the opposing force is termed combat work.

Even though the framework for this study is bounded by a theory of combat, the study itself is not limited to considering the actions of command during the combat action.

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[75]*Ibid.*, p. 2.

[76]*Ibid.*, p. 2.

The reason for this is that both the functions of the command and the effectiveness of the commander are established long before combat is initiated. This apparent disparity is encompassed in the division between combat potential and combat power. The ability and proficiency of the commander and his command are factors that affect the capacity of the force to transform combat potential into combat power. The definitions and relationships discussed in this section establish the fundamental operating parameters for the effectiveness of a force in combat, and the role of command in that venue. The following section considers the manner in which the commander implements the function and process of command and control.

One problem that has been pervasive in consideration of forces in combat is that most theorists and combat modelers have attempted to represent combat as a single-sided phenomenon, when the reality is that the command-control process in combat is interactive. The essence of combat is the interaction of forces diametrically opposed to one another. An example of a single-sided command-control cycle is presented in Figure 7. This cycle is attributed to Dr. J. S. Lawson. The Lawson model, expanded to account for an interactive process, is depicted in Figure 8. As presented, the commander has direct control over the actions of his forces. The actions of the controlled forces are directed at the enemy and achieve some form of combat work, or visible result. The commander is then able to sense alterations in the state of his own forces, the environment, and the enemy. The quality of the feedback the commander receives becomes progressively less reliable, the more the source of the feedback is removed from the commander. This relationship is due to the noise, or

entropy, that is inherent in all systems. The commander's next action results from his interpretation of those states. The idea of a cybernetic approach contemplates a third dimension of time when the interactive process becomes iterated. Iteration is the aspect of combat action that empowers the cybernetic approach. The cybernetic approach is rooted in the idea that being able to predict or control the enemy's actions would provide a long lasting and possibly decisive advantage over the adversary.

B. DECISION THEORIES

One thing that a commander must do to establish command and maintain control is to decide what action he is going to take. The decision process is integral both to understanding the concept of a cybernetic approach and to establishing its utility. Therefore, it is necessary to discuss decision theory, some basic decision making paradigms, the fundamentals of the cognitive process, and the manner in which cognitive factors are employed in the commander's decision process. A decision is "a choice made by either an individual or a group of individuals in pursuit of some purpose."[77] The basic ingredients of a decision are options, information, and environment. Options consist of all possible courses of action available to the decision maker. Information, which amounts to the "measure of the regularity of a pattern,"[78] provides the material the decision maker employs to reach a

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[77]John Steinbruner, *The Cybernetic Theory of Decision: New Dimensions of Political Analysis*, (Princeton, Princeton University Press, 1974), p. 16.

[78]Norbert Wiener, *The Human Use of Human Beings: Cybernetics and Society* (Boston: Houghton Mifflin Company, 1950), p. 6.

decision. The environment is the interactive field in which decisions are converted into commands that are transmitted to, and ultimately acted upon , by combat forces. The environment is interactive, in that it both effects and is effected by the forces that operate within it.

There are two types of decisions, simple and complex. A simple decision is a decision that has few options which are clearly disparate, has the luxury of perfect or near perfect information, and occurs in an isolated environment, that is, one which does not allow for compounding effects.[79]

Complex decision making refers to a series of discrete decisions oriented toward a single culminating result. Because a complex decision is actually a series of decisions rather than a single decision, each of these single decisions impacts the future decisions in the sequence. This compounding effect creates the necessity for a value trade-off in the complex decision process. Value trade relationships are further complicated by the lack of perfect information concerning the environment. This lack of knowledge is called uncertainty. Finally, the series of discrete decisions becomes yet more complicated when there are organizational concerns introduced into the process. The complex decision problem then,

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[79]Compound effects of a decision are those effects on the environment caused by the decision which were not intended by the decision maker at the time the decision was made. Consideration of the possibility of compound effects by the decision maker before the decision is made has the potential to increase both the uncertainty experienced by the decision maker and the complexity of the problem. The compound effects are represented, in communications theory, by the concept of noise and the manner the noise effects the signal being transmitted.

is one in which the following conditions hold: 1) Two or more values are affected by the decision. 2) There is a trade-off relationship between the values such that the greater return to one can be obtained only at a loss to the other. 3) There is uncertainty (i.e., imperfect correspondence between information and the environment) in the problem. 4) The power to make the decision is dispersed over a number of individual actors and/or organizational units. (Increasing the segregation of the elements will increase uncertainty).[80]

The thread that runs throughout the complex decision process is uncertainty. The impact of uncertainty on the commander was illustrated by Colonel C. E. Callwell when he wrote that "there is also the uncertainty in the mind of the commander to be taken into account...Nothing more tends to hinder the framing of a decisive and assured plan of campaign and to delay the execution of the plan when it has been resolved upon, than this feeling of doubt, the fear that something unexpected will mar the combination and upset the calculations upon which it was based."[81] Uncertainty results from the lack of perfect information on the part of the commander.

There are three categories of uncertainty.[82] The first category, categorical uncertainty, is the degree of assurance that a given relationship will produce a given result.

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[80]Steinbruner, p. 16.

[81]C. E. Callwell, *Small Wars: Their Principles and Practice*, (London: Harrison and Sons, 1906). p. 46-47.

[82]Alfred C. Maurer, *et al. Intelligence: Policy and Process*, (Boulder: Westview Press,1985), p. 221-222.

The second category is widely used by game theorists and deals with uncertainty of known probabilities which allow for the accurate calculation of the chances that a given result will occur. The third category is most reflective of reality and concerns the uncertainty of estimated probability of a specific result following from a given relationship.

For complex decisions, uncertainty can be considered in four areas of concern to the decision-maker These are: 1) uncertainty of ability, 2) uncertainty of results, 3) uncertainty of perception and, 4) uncertainty of reaction. The first form of uncertainty concerns the ability of a decision making body to assess its assets and capabilities. The second form, uncertainty of result, concerns the body's ability to determine the favorability of the relative power configuration that will result from a specific course of action. The third type, determining the perception a desired action will have in all audiences concerned, involves determining the values of the different audiences. Finally, uncertainty over reaction involves balancing an opponent's capabilities with his will to use them. Each of these forms of uncertainty must be dealt with in some manner by the decision maker.

To make the impact of uncertainty on decision making process of the commander understandable, a baseline, to which all commanders are assumed to adhere, must be established. The assumption made here is that all the commanders are rational actors[83] and that their decisions will be rational based on the information available to them as impacted by pertinent cognitive factors. While the cognitive factors are different for each individual,

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[83]For heuristic purposes, it is assumed that the actors will behave as if they were rational.

there are some generalizations that can be made which serve as an approximation of the environment experienced by the decision maker.

Though the operating codes of decision makers differ, there are some basic methods for dealing with uncertainty which apply across the spectrum. The methods are: the cognitive shortcut, gap filling, and issue arbitration.[84] While these methods are valuable tools, they each involve risks. Over-dependence on any one tool can cause both misperceptions and miscalculations, such as exaggeration of threat posed by the adversary and a tendency to downplay, or exaggerate, the risks of certain actions.

The cognitive shortcut is employed primarily to counter information overload and allows the decision maker to quickly determine which issues are critical, what information and sources are reliable, and what areas need to be assessed more carefully.[85] The cognitive shortcut is based on existing belief systems and historical patterns. The danger of this tool is that the shortcut necessarily limits the amount of information assessed and, especially in the case of a unique situation, may cause critical information to be ignored. These problems can result from "either the conscious application of certain decisional rules of thumb...or the more unconscious activation of certain scripts by situational stimuli."[86] These unconscious

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[84]Alexander George *Avoiding War: Problems of Crisis Management* (San Francisco: Westview Press, 1991) p. 427-436.

[85]*Ibid.*, p. 429.

[86]*Ibid.*, p. 430.

scripts are "conditioned reflexes" triggered by "the continued association of the old strong natural stimulus for a particular reaction and the new concomitant one."[87]

Gap filling is essentially the antipode of the cognitive shortcut. This technique operates when there is an information deficit and sufficient time to gather information is not available. Gap filling operates on analogies and metaphors as well as established patterns. The utilization of an analogy or metaphor amounts to applying a simple rule of thumb to a complex situation. An example of this would be President Kennedy's attempt to analyze the Cuban Missile Crisis as though it were a poker game and using this analysis method to determine if the Soviet Union was bluffing by interpreting the signals that were available. The gap filling technique is often used in assessing risk levels involved with different potential courses of action.

Issue arbitration comes into play when there is contradictory information concerning an issue. In this situation, the decision maker must assess the differing views and determine whether a single course of action or a compromise would best suit the situation. The arbitrator role can be easily abused when a decision maker forces an irrational compromise without considering the implications of the action or when the decision maker reaches premature closure on an issue without properly evaluating the information available.

Since decision makers can never be entirely sure of the outcome of their actions under uncertainty, they must find a way to assess the probability of alternative outcomes.

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[87]Wiener, p. 80.

One manner of weighing the probability of various outcomes is through an analytic process. The first decision paradigm that will be examined, the analytic paradigm, is based on this process. In an effort to bound this process, John Steinbruner states that:

> *"A given process of decision is analytic if upon examination one can find evidence that there was at least limited value integration, that alternative outcomes were analyzed and evaluated, and that new information regarding central variables of the problem did produce plausibly appropriate subjective adjustments. In following the process through a sequence of decision points it can be found analytic if one can observe a causal learning process; that is, an explicit set of calculations which evolve in such a way that higher, more general conceptions of decision objectives came to be included (upward expansion), as well as critical environmental interactions which were previously excluded (lateral expansion)."*[88]

This paradigm is functional when applied to simple decisions, but has difficulty explaining unconscious decisions and complex decisions under uncertainty. The reason for the difficulties encountered by the paradigm in the case of unconscious decisions, which are often complex, is that these decisions are made so regularly without conscious consideration that there is little opportunity for an analytic process to occur. In consideration of complex decisions made under uncertainty, the analytic paradigm encounters difficulty in dealing with uncertainty. For an analytic decision to be made, it must consider as much information concerning a situation as possible. Under uncertainty there may be too much, too little, or contradictory information. Any of these situations would tend to paralyze a strictly analytic process.

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[88]Steinbruner, p. 45.

The analytic process "is complex and time consuming and requires intellectual acuity."[89] Even so, this paradigm is useful during the planning stages of an operation where there are numerous individuals or organizations involved in the decision process. However, the utility of this paradigm is decreased during operational phases when a single commander is involved in making "short-fuse" decisions. Some constraints that limit the commander's ability to engage in an analytic process are time constraints and stress. One benefit of analytic decision making during the planning phase is that it facilitates developing alternative approaches to accomplishing the mission. This allows for consideration of alternative approaches while maintaining a unity of objective. The unity of objective allows for planning and rehearsal of various approaches to achieve the same objective which, in turn, generates a higher level of cohesiveness in the plan.

The second paradigm considered is the cybernetic paradigm. Cybernetics is the "study of messages, in particular the effective messages of control."[90] This paradigm is "organized around notions of short-cycle information feedback and the elimination of uncertainty."[91] "The cybernetic process... bases decisions on a few key variables for which there is information and feedback."[92] The fundamental logic of this paradigm is exemplified by the Watt steam engine governor which was designed in the 19th century. This device,

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[89]Maurer, p. 222.

[90]Wiener, p. 8.

[91]Steinbruner, p. 51.

[92]Maurer, p. 223.

depicted in Figure 9, involves two weighted balls mounted on arms that are attached to a central shaft. The central shaft is connected to the engine in such a manner that the speed of rotation of the shaft is a function of engine speed. The faster the engine runs, the faster the shaft rotates and, as a result of centrifugal force, the higher the balls rise. The governor operates by altering the throttle position in relation to the height of the balls. As the balls rise, the throttle is closed causing the engine to slow. As the engine slows the balls fall, which causes the throttle to open. The result is that the height of the balls, and therefore the engine speed, are kept within established operating parameters. "The decision making capacity of the Watt governor, it has been recognized, exists in the fact that it sets up a structured feedback loop between the speed of the engine and the degree of throttle opening. It serves to focus decisions about throttle openings on a single variable (speed), which is itself a function of the throttle's action."[93] This mechanism is able to monitor a limited number of key parameters and take action when those parameters are not within a predesignated range.

The Watt governor provides an elementary example of the cybernetic feedback process. The feedback, in this case, causes incremental response depending on the magnitude of the indicator. More complex examples illustrate how multiple, but limited, indicators can be monitored by various feedback loops and can drive actions on different levels of response. This capability allows a relatively simple mechanism to deal with

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[93]Steinbruner, p. 52.

complex situations. The cybernetic paradigm goes beyond the elementary kinaesthetic capacity of the mechanical governor to incorporate the capacity of a system to learn and adapt its operating parameters to changes in the environment. The cybernetic paradigm, when applied to complex decisions under conditions of uncertainty, "provides a means of removing or avoiding uncertainty to reduce the burdens of processing information and of dividing problems into segments."[94] This process allows the decision maker to assess the state of his environment and compares the findings with parameters established by his biases and cognitive patterns. The decisions that follow this comparison are aimed at bringing the situation back to the desired state. In short, the decision maker acts either to maintain the environment at, or return it to, a desired state. The cybernetic decision criterion is "survival as directly reflected in the internal state of the decision-making mechanism."[95]

The efficiency of a cybernetic system depends on the accuracy with which it measures the state of the environment and the consistency of those indicators. When various key indicators introduce conflicting information, the system is forced to deal with uncertainty. "Cybernetic mechanisms which achieve uncertainty control do so by focusing the decision process on a few incoming variables while eliminating entirely any serious calculation of probable outcomes...The cybernetic thesis then is that the decision mechanisms

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[94]Maurer, p. 223.

[95]Steinbruner, p. 65.

screen out information which the established set of responses are not programmed to accept."[96]

This paradigm is useful because it accounts for the cognitive limitations of commanders and organizations that are faced with time limitations that do not allow for analytic research to be conducted and must make complex decisions under conditions of uncertainty. The analytic paradigm is most useful during pre-crisis planning and in determining the benefits and costs of various courses of action under various conditions, but aids little in the understanding of short-fuse decisions that are made in less than perfect conditions. The cybernetic paradigm provides an explanation for these types of decision situations. Additionally, considering the cybernetic paradigm as well as the various cognitive factors and methods for dealing with uncertainty adds greatly to the explanation of the manner in which information is filtered, processed and utilized in the decision process. Finally, understanding the process in which decisions are made facilitates both understanding the concept of a cybernetic approach and considering the implications of applying it as an operational tool. The upcoming chapter describes the concept in detail as it applies to special operations.

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[96]Steinbruner, p. 66-67.

III. THE CYBERNETIC APPROACH: AN ALTERNATIVE TO SURPRISE

What is the nature of the cybernetic approach and how does it fit into the framework of force-on-force interaction? How is the cybernetic approach structured, and how does it operate? How can it be employed as a tool for special operations forces? What limitations effect the utility of this approach; and how can these limitations be countered? These key questions, and a few others, are addressed in this chapter.

Let us begin by examining the nature of the cybernetic approach and the manner in which it fits into the framework of force-on-force interaction. Relative superiority has been defined as the differential in combat power exerted by opposing forces in a force-on-force interaction. The combat power exerted by each force is a factor of the combat potential of the units involved, their cohesiveness or resistivity of the units to the effects of friction, and the effects of friction on the units. The cybernetic approach seeks to develop a temporal advantage by operating within the enemy's decision loop. The cybernetic approach facilitates this by exploiting the vulnerabilities of the opposing force while avoiding the exploitation of friendly force vulnerabilities.

The vulnerabilities of the opposing force are exploited by interrupting, or otherwise effecting, the command and control processes of the force at critical nodes. These critical points, or nodes of vulnerability, are the key indicators from which the opposing commander receives feedback on the state of his forces and the environment. Nodes of vulnerability are the key to control through feedback, and when manipulated, should have significant

predictable effect on the enemy commander's ability to control his force. Exploitation of these nodes makes up the offensive or external component of the cybernetic approach.

The defensive, or internal, component of the approach consists of the protection of friendly nodes of vulnerability. The elements of this component, which will be discussed in detail later in the chapter, increase the overall resistivity of the friendly force to the effects of friction. An advantage results from exploitation of elements that increase the cohesiveness of one force, decrease the cohesiveness of the opposing force, and increase the friction the opposing force must contend with. This advantage is expressed as a contributing (or detracting) factor to the cohesiveness of the forces involved, and is achieved and maintained in relation to the opponent.

By viewing relative superiority as a function of effectively delivered combat power,[97] it becomes easier to perceive the importance of a sustained advantage in the ongoing struggle between cybernetic processes. As presented in Figure 2, McRaven's model represents relative superiority as a fixed line. The model presented in this thesis defines relative superiority as a relative differential in the summation of component elements of opposed forces.

The difference in the two concepts results from the expansion of the environment to consider both forces in the command-control problem. This is to say that combat is an iterated, interactive process. The actions of each force are dependent upon the perceived

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[97]Hughes, "Command and Control Within a Framework of a Theory of Combat", p. 2.

actions of the opposing force. As discussed earlier, high level communication is tenuous and subject to misinterpretation by the intended target. The possibility of misinterpretation decreases as the information available to the commander increases. The availability of significant accurate information serves to decrease the uncertainty of the commander. Even so, the utility of accurate information is time critical; even accurate information, when delayed, is of decreasing value.

The reason for the decreasing value of tactical information lies in the fact that forces involved in combat are increasingly exposed to one another. In absence of efforts to achieve information dominance, as the time of exposure increases, the relative advantage experienced by one side with reference to clarity and completeness of information concerning the opposing force diminishes. Generally, as exposure time increases, the advantages gained through security and surprise that allow a smaller force to operate effectively against the larger force are eroded. The erosion of these advantages leaves the opposing forces in such a position that the physically stronger force will have a decisive advantage. Therefore, an operation embarked upon by a small force against a physically superior force is likely doomed, unless the operation can be completed before the enemy is able to gain relative superiority.

From this line of reasoning follow the assumptions that cohesiveness and surprise can be seen as "wasting" assets, while friction can be represented as a compounding force (up to the point where contact is broken or the mission is complete). Figure 3 is an elementary representation of the force-on-force relationships that exist in combat between a small

assaulting force and a numerically superior defending force. Increasing the cohesiveness of the friendly force would limit the effect of friction and therefore increase the magnitude of the cohesiveness of the force. A second element, comprised of actions taken to limit the enemy's ability to transfer his combat potential into combat power, should result in a decrease of the enemy's cohesiveness. The combined effects would result in the establishment of relative positioning of the two forces. Relative superiority then, represented as the relative differential of the combat power exerted by two opposing forces, would initially favor the attacking force because of advantages gained through more complete knowledge of the situation, initiative, and surprise.

In operations where the element of surprise is not a factor, it would seem that the operation would have such minuscule chances of success that the operation would not be worth attempting. However, throughout history there have been many of examples of special operations that did not enjoy surprise, yet were successful. Furthermore, in many of these operations the attacking force was able to maintain relative superiority over the enemy for extended periods. The question then is, what allowed these forces to operate successfully against physically superior forces without the benefit of surprise? One element, proposed herein, which might account for this disparity, is the possibility that one side, wittingly or not, employed a cybernetic approach.

Surprise is an important, but non-critical, element in the success of special operations. Although many special operations have been successful without the benefits of surprise, a cybernetic advantage is not a replacement for surprise. The two elements can, and should,

operate in a complementary fashion when possible. The cybernetic approach facilitates the continuation of any operation, regardless of whether or not surprise is a factor, by allowing the force to operate within the enemy's decision-making loop. This element provides the ability to gain relative superiority or extend its duration in order to enhance the chances of success in special operations.

The cybernetic approach is but one of the components that add to the achievement of relative superiority; others are simplicity, security, repetition, speed, and purpose.[98] However, the cybernetic approach is unique in that it can be maintained over an extended period while other elements provide diminishing returns. Additionally, a cybernetic approach makes it possible to employ other elements when they could not be utilized otherwise. The idea of interoperability of the cybernetic approach will be discussed at a later point. In short, the cybernetic advantage is a contributing element in the effort to achieve and maintain relative superiority. The qualities of this element are unique in that it can extend the duration of relative superiority and is capable of operating independently or in conjunction with other elements that could not otherwise be employed.

The second issue to be addressed concerns the manner in which the cybernetic approach is structured and how it operates. The cybernetic approach can be divided into two primary areas, offensive and defensive. The offensive component amounts to efforts aimed at effecting the enemy's ability to transfer combat potential into combat power, or to use

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[98]McRaven, p. 16.

available combat power in a manner that will achieve combat results. The methods through which the offensive component can be achieved vary with each mission, but are always targeted at exploiting vulnerabilities in the enemy command and control structure. Some examples of offensive actions include interruption of enemy communications, diverting the enemy's attentions away from the actual target, and providing conflicting signals to enemy sensors. Whatever the method used, the effects will generally fall into three categories: paralysis, misdirection, or demoralization of the enemy.

Paralysis concerns limiting the enemy's ability to react to the actions being taken by the assaulting force. The ultimate form of paralysis (and the ultimate cybernetic advantage) is ignorance on the part of the enemy. Limiting the enemy's ability to respond is achieved by interrupting the flow of information at some point in the communication process. In high level communication, the information flow can be interrupted before it reaches its destination or the signal can be nullified by transmission of counterfactual information. In low level communication, paralysis can be achieved by manipulating the flow of instructions, or by suppressing critical elements of the enemy force.

Misdirection of enemy forces is achieved through deceptive means. The deception can be carried out by increasing or decreasing the uncertainty of the enemy command with reference to the situation. By increasing the uncertainty of the enemy command, the assaulting command can essentially slow the rate and accuracy with which enemy decisions are reached and implemented. Additionally, increased uncertainty can cause a commander to be reserved in committing his forces. This situation would be beneficial to the assault

force's ability to maintain the initiative and make accurate decisions more quickly than the confused enemy commander. The enemy's certainty that a single course of action will be followed is often achieved through active deception. By structuring a deception plan and providing the enemy with sufficient information to convince them that the deception plan is actually the plan being executed, the friendly commander can establish a measure of control over the actions of the enemy commander. In the least, this action will increase the uncertainty of the enemy commander. At best it will cause him to commit his forces to a single, erroneous plan. The enemy commander will be less likely to maintain a significant reserve if he is convinced of his correctness in predicting the assault force's actions. An important point to be considered in the planning of active deception is that it is much easier to convince a commander that a plan is actually being executed if the deception plan reenforces the enemy commander's predispositions.[99]

The third effect of the offensive component of a cybernetic approach is demoralization of the enemy force. Demoralization can often be attributed to the repeated successful achievement of the offensive component of the cybernetic approach over a period of time. This would normally be associated with a protracted operation such as the Caribbean operations of Sir Francis Drake, during which word of his "systematic

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[99]Reenforcement of the predispositions of the enemy in deceptive efforts is discussed at length in Herbig (1982), Van Vleet (1985), and Whaley (1969). The first and most thorough of these can be found in Whaley's work.

destruction"[100] of Cartagena and pillaging of other settlements spread throughout the region causing the local population to refer to their Spanish protectors as "an old ass laden with lances lacking steel heads."[101] However, there are other means of demoralizing an enemy force. Some examples are extended bombardment prior to execution of an operation, utilization of the principle of alternative objectives, or the utilization of multiple feints either to lull the enemy into a false sense of security or to perturb the enemy enough to make him act in a manner that takes him off balance. No matter what effect is to be achieved through the use of a cybernetic approach, it is achieved by exploiting the vulnerabilities of the opposing force.

The vulnerabilities of a force come in many forms. One critical area common to all forces is Command and Control (C2), which is the process that alters the states or attributes of forces, usually the forces commanded.[102] The essence of the cybernetic approach rests in exploitation of the vulnerability of this process. Castex illustrates the role of a cybernetic approach at the strategic and operational levels of the command-control process in his discussion of the use of space and distance to achieve security without the use of a secondary force. He states that by "moving rapidly and consolidating suddenly in the chosen principle theater, one takes advantage of the delay before the enemy has recovered from his surprise

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[100]G. M. Thomson, *Sir Francis Drake* (New York: Morrow, 1972), p. 190.

[101]*Ibid.*, p. 191.

[102]Paraphrase of Hughes, "Command and Control Within a Framework of a Theory of Combat", p. 4.

and succeeded in effecting a parallel displacement of forces."[103] The goal in special operations is to maintain this advantage until the mission is accomplished.

The defensive component of the cybernetic approach is composed of actions taken to increase the cohesion of the assault force. The means of increasing cohesion amount to increasing the security of the force. Security considerations, in this case, can be separated into two areas: security of body and security of plan.[104] Security of body amounts to the capability of the force to carry out the mission in the face of friction. The ability of a force to execute a mission under adverse conditions has been attributed to numerous factors such as, training, discipline, fitness, and esprit de corps. The capabilities of a force can be generally discussed in terms of three categories: training, organization, and information.

The training of a force includes such considerations as selection, equipment, experience, and initiative and is important in the development of esprit de corps. The foundation for building a dependable force is personnel selection. The qualities desired in an individual that is to be a part of a commando unit are dissimilar to the desired qualities for other jobs. When the members of a unit are selected, they should operate as a unit for a sufficient amount of time to allow them to develop a high level of cohesiveness and cross training. Additionally, the equipment used by the force should be tailored to the tasks at hand. Because of this, the units must train regularly on the types of equipment that they will

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[103]Castex, p. 121.

[104]*Ibid.*, p. 111-112.

use. Another important element of developing a robust force is the ability of the force to exercise initiative without detracting from the mission. This ability can be developed by training the force on all possible contingencies before an operation is to be executed and by making the commander's intent known to every member of the force. Increasing the familiarization of the members of a unit with force capabilities will increase the dependability of feedback provided to the commander and increases the ability of the force to deal with friction. Feedback dependability will be increased because the unit will be more familiar with the commander's expectations and will be better prepared to meet those expectations than a less cohesive unit. The force will be better prepared to deal with friction because the members of the unit will have an increased understanding of the various elements of a given mission and how changes in the environment would effect that mission.

The organizational component of force capability is composed of the influence of doctrine and command structure. Doctrine is the "subcomponent of grand strategy that deals explicitly with military means." It is critical in determining "what means shall be employed? and how shall they be employed?"[105] The missions to be conducted by a force and the means the force has to accomplish the mission are of great significance to the cohesiveness of the force. Similarly, the command structure of the force effects the flexibility and reactive capability of the force. A hierarchically structured command will be less flexible and more easily subjected to paralysis than a force with a network structure. On the other hand, the

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[105]Barry Posen, *The Sources of Military Doctrine: France, Britain, and Germany Between the World Wars* (Ithaca: Cornell University Press, 1984), p. 13.

network structure is more easily subjected to counterfactual reporting[106] and confusion than a hierarchical one. Perhaps an organizational structure that is a hybrid of these two organizational types would prove more robust than a structure that is strictly one or the other.

The final category of force capability is information. The information component refers broadly to the intelligence that is available to the commander. "The ultimate objective of intelligence is to enable an action to be optimized."[107] This statement, in a few words, comes to the point of having an effective intelligence apparatus. The system that provides intelligence to the force is of critical importance in achieving both the offensive and defensive components of the cybernetic approach. In the defensive element, accurate timely information aids the cohesiveness of the force by decreasing the uncertainty of the commander and by allowing him to more accurately tailor his force to the task at hand.

The second area, security of plan, refers to the ability of an organization to bring together all the disparate elements that are required for the operation without disclosing information relating to the operation to the enemy. In short, this amounts to operational security. Security of plan also refers to the preservation of security surrounding the details of past operations so that similar tactics can be counted on for future use.

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[106]Counterfactual reporting refers to the use of conflicting information to increase the uncertainty of the enemy.

[107]Michael I. Handel, *Intelligence and Military Operations* (Portland: Frank Cass, 1990), p. 1.

A. THE CYBERNETIC APPROACH AND SPECIAL OPERATIONS

This approach explains how special operations can be successful without surprise. Additionally, the model based on the approach attempts to operationalize its tenets in a manner that can be utilized as a tool for planning and analysis. The theory proposes that, through the use of a cybernetic approach which emphasizes control through feedback, a small force can achieve and maintain relative superiority throughout an operation. Furthermore, the theory proposes that the cybernetic approach, when employed with other principles of special operations,[108] can act as a force multiplier. Since the advantage gained through the cybernetic approach is relative, it can be employed to some degree by any size force at any level of warfare. However, small forces may be especially well suited to use this tool.

This theory challenges several commonly held assumptions concerning special operations and military force in general. The first is that surprise is critical to the success of special operations. As will be demonstrated by the historical cases examines, many special operations have been successful without the benefits of surprise and when surprise has failed. Conversely, there have also ben cases in which special operations that achieved almost complete surprise have failed.

Another assumption challenged by this theory is that relative superiority can be maintained by a small force by a larger force for only a short period of time. While this

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[108]McRaven, p. 8.

assumption is true in many cases, if fails to consider the opportunities afforded by a cybernetic approach. The ranger raid on the village of St. Francis, which is examined in Chapter V of this thesis, illustrates how a cybernetic approach can greatly in crease the duration of relative superiority. The case of Task Force Baum, which is the subject of Chapter VII of this study, illustrates the temporary nature of relative superiority when a cybernetic approach is not employed.

1. Hypotheses

Out of the cybernetic approach fall several hypotheses. These hypotheses will be tested against historical case studies later in the work to determine their validity. The first hypothesis lies in contradiction to the commonly held assumption that surprise is required for special operations success. ***Hypothesis One: Surprise is an important, but non-critical element in the success of special operations.*** The purpose of this hypothesis is not to denigrate the role that surprise can play in the success of a small force opposing a numerically superior or entrenched force, but to illustrate that surprise is non-critical to the calculus of success when other elements, particularly a cybernetic approach, are employed.

The second hypothesis considers the validity of the cybernetic approach in that it tests the approach as defined at the outset of this chapter. ***Hypothesis Two: A relative advantage can be gained over the enemy, regardless of whether surprise is a factor, by employing a cybernetic approach in order to operate within the enemy's decision loop.***[109] This

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[109]The cybernetic approach is composed of offensive and defensive components. The offensive component is achieved through the identification and exploitation of the

hypothesis represents the core of this thesis. The remaining hypotheses are based on the assumption that this hypothesis will hold true.

A third hypothesis to be tested in this work is composed of two elements that amount to a test of the utility of the cybernetic approach. ***Hypothesis Three: Through the employment of a cybernetic approach, a small force can maintain relative superiority over a potentially stronger force for extended periods of time. In utilizing the cybernetic approach, the duration of the operation is of less importance than the action-reaction differential between forces involved in a force-on-force interaction***. This hypothesis tests the utility of the cybernetic approach in several dimensions. First, it contests the idea that absolute force strength and speed are critical measures of force effectiveness. Second, it highlights the concept of combat, particularly in the form of special operations, as an iterated, interactive process in which the actions of each force depend on the actions of the opposing force. Third, the hypothesis emphasizes the importance of the relative nature of force interaction.

The fourth hypothesis to be tested concerns the ability of the cybernetic approach to operate in harmony with other elements that can lead to special operations success. ***Hypothesis Four: While the cybernetic approach has the capability to operate independent***

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enemy's critical nodes of vulnerability which impact the ability of the commander to effectively employ his force. The defensive component is achieved through increasing the cohesion of the friendly force by identifying and protecting critical nodes of vulnerability.

of other elements that can lead to successful operations, it can also be used in conjunction with these elements and provides a significant force multiplier in this role.

The final hypothesis to be tested concerns the ability of special operations forces of employ the cybernetic approach. ***Hypothesis Five: While the cybernetic approach can be utilized in any force-on-force interaction, special operations forces have intrinsic qualities that especially suit them to employ the cybernetic approach***. Among these qualities are flexibility, mobility, less hierarchically structured organizations, close linkage with high command, and reactive capability.

2. Tool for Planning and Analysis

The next issue of significance concerning the cybernetic approach is determining how it can be employed as a tool for special operations forces. The dilemma faced in this area is not unlike the problem Barton Whaley attempted to grapple with in his work on the stratagems of war. For Whaley, the difficulty with utilizing deception as a tool came in quantifying its value. Whaley raised this issue when he stated that "it is much more difficult to find suitable heuristic models for deception, precisely because deception is not made of concrete elements but is, rather, composed of intangibles that cannot be directly measured or mapped."[110] Whaley cites some symptoms of this problem as the historic failure to teach stratagem and the aversion to consider deception in the theories on warfare in more than an

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[110]Whaley, p. 129.

anecdotal manner. The result of the historic aversion to the quantification of surprise and deception is evident in Whaley's comments concerning Liddell Hart:

> "Liddell Hart's theory of the 'indirect approach' has successfully integrated the principle of mobility with that of surprise and also stresses the importance of deception in attaining surprise. But it leaves hanging the precise manner in which deception planning fits his theory. He abandons the argument just at the point where he might have shown how deception serves surprise. It is unfortunate that Liddell Hart did not press his analysis a step further, because I am inclined to believe he then would have given an operationally useful guide to deception planning."[111]

Whaley's argument accurately describes the limitations of Liddell Hart's work. However, Liddell Hart was not particularly interested in operationalizing his concept of the "indirect approach" or the place of deception and surprise in the concept. Liddell Hart was interested in applying the "indirect approach" concept as a grand strategy for Great Britain. Even so, Whaley attempts to take the extra step and design a decision-making model. The goal of his model is to provide a "simple procedure for designing political-military operations in such a way as to substantially increase the chance of gaining surprise."[112] In order to achieve this gaol, Whaley;'s model is designed to do three things. The first is to insure that the target is faced with an ambiguous situation. Second, the model requires that the target be presented with alternative solutions to the ambiguous situation. Finally, the target must be convinced to select the desired solution. The end result is a foe that "chooses decisively and wrong."[113]

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[111]*Ibid.*, p. 128.

[112]*Ibid.*, p. 139.

[113]VanVleet, p. 223.

The overall goal of this work is similar to Whaley's with respect to the cybernetic approach. This goal is to design a simple procedure for incorporating a cybernetic approach into the planning and execution of special operations, so as to enhance the robustness of these operations. The tool will be presented as a model that can be employed both as an analytic tool for examining historic cases and as a planning aid that will facilitate the consideration of the factors that allow the commander to achieve and maintain a cybernetic advantage. When the model is used as an analytic tool, it should be used as a training aid for commanders and those involved in planning missions. As a planning tool, the model should be used as a basic guide in developing the opportunities and restrictions associated with the mission.

The initial steps of the cybernetic approach come in the planning phases of the operation. At this point, the problem is one of determining the means to be employed in manipulating the command-control process. The first step is to determine the location of the enemy's nodes of vulnerability and decide which of these nodes are critical. As stated earlier, nodes of vulnerability are the keys to controlling the feedback of the enemy commander. The manipulation of these nodes should have significant, predictable effect on the enemy commander's ability to control his force.

The next step is to establish a means of exploiting these nodes. This step includes determining what assets are available and the optimum means for employing them. Once this determination has been made, the exploitation of the node can be incorporated into the operational plan. Just as with the rest of the plan, the means of exploitation should not be

exposed, so that the same or similar means maybe used at a later time. The establishment of security measures is the last element of the planning process, but this does not mean that security measures should come at the end of the process. Security must be maintained at all times, regardless of the point in the operation. One of the primary reasons for this is that the enemy can develop countermeasures for any tactic that is known. The situation surrounding tactics is of significance to this discussion.

The sure result of continued use of any tactic is necessarily to routinize and institutionalize it. Routinization and institutionalization of innovative tactics are necessary for them to be effective in more than an single engagement. In order to train a force to employ tactics, the tactics must be standardized so that they may be implemented and understood throughout the force. "Since the enemy can be expected to know about anything that has been practiced very much...tactics must work even when the enemy is aware of them."[114] Over time, the enemy will develop counters to even the most sound tactics.[115] Therein lies one of the most pervasive dilemmas of warfare, and one which lies at the heart of this study. If an advantage gained by employment of a sound tactic is temporary, then another method must be employed to extend the live expectancy of the advantage. Security of the plan is one means of achieving this.

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[114]Hughes (1986), p. 191.

[115]Routinization and institutionalization allow the enemy to begin development of counters to the tactic. In essence, the steps taken to increase the utility of the tactic create the conditions the enemy requires to begin preparing countermeasures.

Military tactics are developed, partially, in response to the tactics and equipment employed by the opposing forces. This implies some knowledge of likely opponents prior to the engagement. This knowledge is largely based on past tactical employment. Security of the plan consists of preventing exposure of the tactic that will be employed during the engagement. In order to achieve this, a force must have several options in its "tool box" of tactics. Therefore, even if an opposing force has some knowledge of the options available, the force is limited in its ability to prepare for any single option. This element of security of the plan is instrumental in Liddell Hart's concept of the "indirect approach," which entails integrating alternative options into a single plan in order to allow for flexibility on the part of the assaulting force, should the enemy be prepared to respond to one of the approaches utilized.

Following the steps taken to arrive at an achievable plan, comes rehearsal and implementation. Implementation and rehearsal are considered to be part of the planning phase. Actions taken during these segments of the planning phase include realistic rehearsals, which consider every foreseeable contingency, and education of the force on every aspect of the operation to which the individual could be exposed. These actions will lend greatly to the development of an increased level of cohesiveness in the force.

The next phase is execution. The first critical element in this phase is an understanding of the plan, the commander's intent, and the limitations of flexibility on the part of the members of the force. A second critical element in this phase is summed up in what McRaven calls purpose. This purposefulness allows the force to achieve the maximum

unity of effort and combat power. Following completion of the execution phase comes the post-operational phase. In this phase, the operation must be fully debriefed. Debriefing the utility of the cybernetic approach in the particular situation will facilitate continued improvement in future employment of the tool.

Discussion of the model leads us to the final question concerning the utility of the cybernetic approach as an operational tool. What are its limits and how can these limitations be countered? The cybernetic approach and the advantage gained through its use is, after all, only one of several elements that contribute to the achievement and maintenance of relative superiority, and consequently success, in an operation. In consideration of interactive force-on-force action, a cybernetic approach can provide a small force with the operational "space" to accomplish missions that would otherwise be unthinkable. However, this approach does not provide the commander with a physical tool that has specific parameters and returns specific results. Both the means of employment and the utility of this tool to the commander can be judged by several indicators. The first of these is the time available to the commander to prepare for the mission. Concomitant with available preparation time, is the number of similar missions the unit has conducted. If the unit has significant experience in that particular mission type, then there may be some tactical carryover between the missions. Another limitation is the environment in which the operation is to occur. The environment includes the geographic setting , the political linkages, integration with other operations, and the capabilities of the opposing force.

The final section of this chapter will frame the scope of the study. Following that, the fourth chapter will discus the methodology, case selection criteria, test hypotheses, and the model used in analyzing historical cases. The following chapters will apply this model to various historical cases in order to test the validity of the thesis. The cases, in addition to meeting the criteria, were specifically selected from various periods in history to further emphasize the timelessness of the concept of a cybernetic advantage. The final chapter will drew conclusions based on the findings of the case studies and make recommendations for the future application of the cybernetic approach as both a planning and operational tool for special operations forces.

B. THE SCOPE OF THE THESIS

> "Do not lose sight of the fact that all organized force is in degree war, and that upon organized force the world so far has progressed and still progresses. Upon organized force depends the extended shield, under which the movements of peace advance in quietness; and of organized force war is simply the last expression."[116]

Heretofore, there has been consideration given to various levels of warfare including strategic, operational, and tactical. The reason there has, thus far, been little or no differentiation made between the levels, lies in the universality of the concepts considered. The concept of relative superiority and the cybernetic approach are by no means unique to special operations. In fact, the concepts and principles laid out in this thesis should be generally applicable to a broad range of situations including warfare, business and politics.

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[116]Alfred T. Mahan, *Some Neglected Aspects of War*, (Boston: Little, Brown, and Company, 1907), p. 89.

However, this examination will be limited to consideration of the concepts as they apply to special operations on the tactical and lower operational levels. The reason for this limitation is that special operations are high leverage operations upon which depend the success of high level military and political goals. The political or strategic military costs of failure of special operations far outweigh the physical damage of loss of life sustained. Because the success of special operations is of critical importance, the degree of dependability of these operations must be as high as possible. Therefore, any and all measures that can be implemented in order to increase the likelihood of success must be fully investigated, tested, and if successful, implemented. This study hopes to establish the existence, validity, and utility of the cybernetic approach by framing the theoretical operating parameters and by illustrating the effects of the approach through the use of historic cases.

IV. METHODOLOGY

The following chapters will present analyses of historical cases. The purpose of these case studies is to test the validity of the cybernetic theory of special operations. In general, each of the studies will seek to provide an accurate account of the operation, based on a consensus of historians approach, that allows for testing the concept of relative superiority as an interactive phenomenon, the notion that special operations can be successful without the benefit of surprise, and the utility of a cybernetic approach as a tool for the special operations commander.

A. CASE SELECTION CRITERIA

Case selection is based broadly on three criteria. First, the cases must have been subject to lost surprise or not have incorporated surprise into the plan. Second, operations will be selected to illustrate the validity of the thesis in short-term, protracted, independent, and integrated operations. Finally, the case must provide a tough test of the thesis. Successful cases must have been conducted without the advantages of surprise in order to illustrate that surprise was not the critical factor in their success or failure. Examining both successful and unsuccessful cases will help to illustrate both positive and negative premises of the thesis. The nature of the operation will test whether the principles apply to both short-term and protracted special operations, whether they are conducted independently or in coordination with other conventional operations. Finally, the toughness of the test provided

by the cases will help in testing the importance of the factors considered in the outcome of the case.

Four historic special operations were selected. The fact that the time period covered spans several centuries is intended to demonstrate the enduring nature of the cybernetic advantage. That is to say, while the growth in the importance of information technology to warfare has changed much of the manner in which battle is conducted, the principle of the cybernetic approach applies as readily to the actions of today's elite forces as it did to the actions of Genghis Khan in the thirteenth century.[117] The first case to be examined is the ranger raid on the village of St. Francis in 1759. The second case will consider the actions of Thomas Cochrane along the Spanish coast in 1808. The third case to be considered will be the actions of Task Force Baum in their raid on the prisoner of war camp at Hammelburg. Case number four will be the SEAL raid on Paitilla airfield in Panama in 1989.

B. TEST HYPOTHESES

The following hypotheses, as discussed in the last chapter will be tested in the case study analysis.

> **Hypothesis 1**: Surprise is an important, but non-critical element in the success of special operations.
>
> **Hypothesis 2**: A relative advantage can be gained over the enemy, regardless of whether surprise is a factor, by employing a cybernetic approach in order to operate within the enemy's decision loop.

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[117]John Arquilla, "Cyberwar is Coming!" *Comparative Strategy* (Vol. 12, No. 2, p. 141-165) provides an analysis of Genghis Khan's employment of an information advantage over his adversaries.

Hypothesis 3.1: Through the employment of a cybernetic approach, a small force can maintain relative superiority over a potentially stronger force for extended periods of time.

Hypothesis 3.2: In utilizing the cybernetic approach, the duration of the operation is of much less importance that the action reaction differential between two forces involved in a force-on-force interaction.

Hypothesis 4: While cybernetic approach has the capability to operate independent of other elements that can lead to successful operations, it can also be used in conjunction with these elements and provides a significant force multiplier in this role.

Hypothesis 5: While the cybernetic approach can be utilized in any force-on-force interaction, special operations forces have intrinsic qualities that especially suit them to effectively employ the cybernetic approach.

C. THE MODEL

A model provides a simple means of grappling with complex problems by reducing them to their essential elements. The model must sacrifice some of the complexity of the actual problem in order to provide a relatively simple tool that captures the fundamental operation of the situation. The model presented here is intended as a means of analyzing the importance of various factors in success in combat. In particular, the model concentrates on the role of the cybernetic approach as it applies to special operations.

The model was outlined in the last chapter. The tenets of the model amount to a series of steps that should be followed to facilitate the use of the cybernetic approach as a tool for planning and analysis. The model, if successfully employed, should be useful throughout the operation including use in the planning phase, the execution phase, and in

debriefing. The structure of the model is segregated into three sections: planning, execution, and post-operational.

In the planning phase, nodes of vulnerability and influence are identified and means of exploitation should be considered. During this phase, the vulnerabilities of the assault force should be considered in light of the target's exploitive capabilities. As the planning phase progresses, the measures considered must be incorporated into the plan and extensively rehearsed. When the plan is executed, the commander should maintain a level of flexibility that allows his force to adapt to the developing situation without losing the initiative. This can be accomplished through personnel selection, training, rehearsal, and clear establishment of the commander's intent. Finally, upon completion of the execution phase, a series of debriefs must occur. The first would be a hot wash-up, which would aid in gathering details of the operation that may be lost otherwise. The follow-on debriefings would be used to analyze the operation to determine both strong and weak points and should include representatives from each of the supporting organizations. This will allow the force to improve the means of employing the cybernetic approach. It is important that support organizations be included in debriefings, in order to facilitate improved integration between the force and the support organization as well as improved support techniques. While each of these steps may not have been taken in all of the cases considered, it will be illustrated that the essence of this process occurred and was critical to the successful employment of the cybernetic approach.

D. CASE STUDY STRUCTURE

Each of the case studies are structured in five sections. The first will be the background which will provide an overview of the politico-military environment in which the event occurred. The second section will examine the mission and objective. The third section will provide sketches of the units involved as well as the key players in the operation. The narrative of the case study will examine the chain of events beginning with the preliminary action, planning and training, then proceed to the engagement and the retreat. The final section will be an analysis of the operation. The analysis will first summarize the results of the operation. It will then examine the role played by surprise in the operation. Finally, the analysis section will contain a critique of the cybernetic approach through examination of test hypotheses and the operational model.

V. THE RANGER RAID ON ST. FRANCIS, 1759

A. BACKGROUND

The Seven Years War, the first truly global war, was fought for the control of Central Europe, colonial North America and India. There were additional actions in the Mediterranean, Africa, the West Indies, and the Far East. The parties to the war comprised most of the major powers in Europe. They aligned themselves in two camps with Prussia, Great Britain, and Hanover on one side, and Austria, Saxony, France, Russia, Sweden, and Spain on the other. The war in Europe centered around Austria's desire to repossess the province of Silesia, which had been lost to Prussia in 1748, and as a response to Frederick II of Prussia's attack and capture of Saxony in 1756. In India, the war focused on French efforts to establish control over British colonies in the region.[118]

The portion of the war fought in colonial North America is colloquially referred to as the French and Indian War. This war began in 1754 following the development of a colonial rivalry between France and Great Britain over control of the rich fur-trading region west of the Appalachian mountains and fishing rights along the coast of Newfoundland.[119]

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[118]Francis Parkman, *Montcalm and Wolf: France and England in North America*, Part 7, Vol. I and II, (Boston: Little, Brown and Company, 1898) and Karl W. Schweizer. *England, Prussia and the Seven Years War: Studies in Alliance Policy and Diplomacy*, (Lewiston: The Edwin Mellon Press, 1989) contain thorough accounts of the origins of the war both in North America and on a global scale.

[119]Patrice Louis-René Higonnet, "The Origins of the Seven Years War," *The Journal of Modern History*, vol. 40, March-December 1968.

French claim to the region was based, in part, on an expedition made down the Ohio River by Captain Pierre Joseph Céloron de Blainville in 1749.[120] During his expedition, Céloron tacked up signs and buried lead plates of claim giving "notice of the renewal of possession which we have taken of the said river Ohio, and of all those which fall into it, and of all the territories on both sides as far as the source of the said rivers, as the preceding kings of France have enjoyed or ought to have enjoyed it and which they have maintained by arms and by treaties, particularly those of Ryswick, Utrecht, and Aix-la-Chapelle."[121] The French hoped to limit British settlement of the Ohio Valley and to unite its Canadian colony with other holdings in the South (Louisiana). During the first two years of the conflict, the French were largely successful. However, following a change in British leadership in 1757, the tide of the war began to shift and by 1760, the British had established control over virtually all of French Canada.

While the European style of warfare was predominant in the war in colonial North America, there were ongoing actions that were influenced by the tactics used by the natives, as well as by the terrain over which the war was fought. Indian forces filled two primary roles for the European armies: scouts or guides, and small raiding parties. The variation in tactics manifested itself in raiding operations conducted by small units targeted either at

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[120]Parkman, I, p. 39-65.

[121]Howard Peckham, *The Colonial Wars 1689-1762*, (Chicago: University of Chicago Press, 1964) p. 123. Other accounts that detail this include Higonnet's "The Origins of the Seven Years War" and Richard Smoke's account in *War: Controlling Escalation*, (Cambridge: Harvard University Press, 1977).

vulnerable points in the opposing force or at the support base of the opponent. At the outset of the war, neither the French nor the British personnel possessed an intimate familiarity with the region, or extensive knowledge in the conduct of this style of warfare. Consequently, many of these operations were conducted by Indian tribes with which the European forces were allied or by combined native-European forces. Nonetheless, the popular image of Indian raids, and one not at much variance with the truth, was one of torturing, raping and murdering of innocent men, women and children.

The alliances that existed between the European forces and the Indian tribes are worthy of further consideration. The goals of the allied parties were often divergent, as were the standards of conduct observed by each group. The terms of alliances that existed between Indian tribes and the European armies varied greatly, but the agreements were generally flexible and were often based on devotion to, or respect for, a specific European leader on the part of Indians. In most cases, the Indians served only when "it would give them pleasure."[122] One attitude concerning Indian alliances that was prevalent among British

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[122]Kenneth Roberts, *Northwest Passage*, (New York: Fawcett Crest, 1963), p. 111. Roberts' work is a novel and was written as historical fiction. However, the section of the work that covers the St. Francis raid is remarkably close to the actual chain of events. Research revealed that the primary changes made by Roberts were the alteration of names and development of personalities. The names of many of Roger's officers were traced and proved to be consistent with historical records. Reference to and quotations from Roberts' work were made because the work was written as a narrative account of the mission. Key events, locations and times have been confirmed to the maximum extent possible through strictly historical sources.

officers was that the alliances served primarily to keep Indians on their side. This attitude, while prevalent, did not encompass the full value of Indian alliances to the European forces.

Entering alliances with indigenous peoples allowed the European armies to concentrate their actions against one another, rather than become embroiled in tangential conflicts. The role of the Indian as scout and guide was especially important to the French early in the conflict because most of the action occurred in British controlled territory. Additionally, the French relied heavily on the Indians for information concerning British force disposition. In order to limit the mobility and effectiveness of the French forces, British leadership had to find a means of limiting Indian support to the French.

One means of eroding Indian support for the French was to raise the level of concern the native scouts had for the welfare of their families while they were deployed in support of French forces. Conducting raids on selected villages deep within French held territory was one means of achieving this result. However, to make it clear to the Indians that the raids were a result of the desires of the British and to ensure an acceptable level of assurance the raids would be carried out in accordance with orders, the raids had to be conducted by Colonial forces of European decent. The tool General Jeffrey Amherst used to enact this plan was a group of rangers under the command of Major Robert Rogers. The target he chose was the village of St. Francis.

B. MISSION AND OBJECTIVE

Among the Indian tribes allied with the French in the early stages of the war were the St. Francis Indians. These Indians lived in a village that was approximately 90 miles north

of the northern tip of Missisquoi Bay.[123] The population of the village was made up of a portion of the "defeated remnants of the Pennacook Confederacy" and another group of "New England exiles, the Abnaki," who had fled the region before 1700. These Indians were recruited by the French who "helped to keep alive the bitter feud with the invading English."[124] This village was the target of the first raid by Rogers' Rangers deep into Canadian territory. The actions that precipitated General Amherst's decision to conduct the raid against the St. Francis Indians included, "the treatment which Captain Kennedy had met with." Captain Kennedy "had been sent with a party as a flag of truce to the St. Francis Indians, with proposals of peace to them, and was by them made a prisoner with his whole party."[125] The raid conducted by Rogers and his men served four purposes. First, the raid was intended to "chastise these savages with some severity."[126] Second, it sent a message to the French and other Indians that their territory and its population were not immune from the war. Third, the raid was intended to erode the loyalty and support the Indians provided the French. Finally, removing the village of Saint François near Sorel,[127] would open the

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[123]*Ibid.*, p. 123.

[124]John Cuneo, *Robert Rogers of the Rangers*, (New York: Oxford University Press, 1959), p. 7.

[125]Robert Rogers, *Journal of Major Robert Rogers*, (Ann Arbor: University Microfilms, Inc., 1966), p. 144.

[126]*Ibid.*, p. 144.

[127]Trevor Dupuy, *The Harper Encyclopedia of Military Biography*, (Edison: Castle Books, 1995), p. 638.

area for settlement by British colonials. The mission, as presented to Rogers by General Amherst, was stated as follows:

> "You are this night to set out with the detachment as ordered yesterday, viz. of 200 men, which you will take under your command and proceed to Misisquey Bay, from whence you will march and attack the enemy's settlements on the south-side of the River St. Lawrence, in such a manner as you shall judge most effectual to disgrace the enemy, and for the success and honor of His Majesty's arms. Remember the barbarities that have been committed by the enemy's Indian scoundrels on every occasion where they had an opportunity of shewing their infamous cruelties on the King's subjects, which they have done without mercy. Take your revenge, but don't forger that tho' those villains have dastardly and promiscuously murdered the women and children of all ages, it is my orders that no women or children are killed or hurt. When you have executed your intended service, you will return with your detachment to camp, or join me wherever the army may be."[128]

C. ROGERS' RANGERS

Robert Rogers was born in Methuen, a small frontier town in the Massachusetts Bay Colony on November 18, 1731.[129] His parents, James and Mary Rogers, were of Scotch descent and had emigrated from Northern Ireland. Rogers was raised as a member of the yeoman class of frontier farmers in what would become New Hampshire. Rogers received little formal education, though he was literate. As was common among the yeomen, most of Robert Rogers' education was given at home and was based almost exclusively on the Bible. "In the introduction to his printed *Journals* he spoke as if his 'early education' was

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[128]Rogers, p. 144-145.

[129]Various sources site the date of Rogers' birth to be November 7, 1731. The dates used in this text prior to September 2, 1752 have been advanced eleven days to correspond with the modern calendar.

simply lore gained from Indians." However, "there were few of this race left in eighteenth century New Hampshire."[130] His first military service was under Captain Daniel Ladd, at the age of fourteen. Rogers first saw combat in the service of then Major-General Sir William Johnson, Commander in Chief of the Provincial Forces, during his expedition against Crown Point in August and September of 1755. That same September, Rogers fought at Lake George, where he gained recognition for his exploits, including "leading seventeen men on skates to the first narrows of Lake George, then by night through the snowy mountains past Carillon to lie in ambush."[131] The following March, Rogers was promoted to Captain and given command of a company of rangers. Within two years, Rogers had been promoted to Major and given command of nine companies of rangers. As a major under General Abercrombie, Rogers led his rangers in operations against Ticonderoga and in the Battle of Snowshoes at Lake George. Under General Jeffrey Amherst, Rogers was involved in the taking of Ticonderoga and the battle for Crown Point.[132]

Rogers was essentially responsible for raising the rangers that served under him. Of this group, every member was a volunteer and had significant experience surviving the rugged terrain of the area. Rogers' primary source of volunteers was New Hampshire, as it was the only place where Rogers knew he could find "courageous men skilled in hunting,

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[130]Cuneo, p. 7.

[131]*Ibid.*, p. 31.

[132]Dupuy, p. 638.

tracking and long marches."[133] Depending on the situation, additional personnel were assigned to the rangers by the Commanding General.

The techniques used by Rogers and his men were characteristic of the frontiersmen of the American colonies. These methods were much closer to those employed by the native Indian than they were to those of the British or French. This situation caused concern among the British command. A significant portion of the British command structure, who considered the colonists to be lesser to begin with, saw the rangers as little more than savages with pallid skin. This attitude explains, to some extent, the limited employment of the rangers during the war and the disappearance of the rangers following the conflict.[134] There were, however, a few British officers that realized the valuable role the rangers could play if properly utilized. One of the few who perceived their value was General Jeffrey Amherst.

General Amherst had been selected by William Pitt (the elder) to lead an expedition into Canada early in 1758. During this expedition, he captured the French fortress of Louisbourg on Cape Breton Island. Afterwards, he was selected to relieve General James Abercrombie as Commander in Chief America and did so on September 18, 1758.[135] Upon

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[133]Cuneo, p. 33.

[134]The primary reason for disbanding the rangers following the conclusion of the war was the reduction in funding for the colonial forces. The demise of the rangers is discussed in the journals of General Jeffrey Amherst, entitled, *Lord Jeffrey Amherst* (New York, 1933).

[135]Dupuy, p. 38-39.

taking command, Amherst immediately put his rangers to use in a manner that suited their capabilities.

When Rogers was assigned the St. Francis mission, his force of rangers was two hundred strong. The men were separated into nine companies. Eight of these companies were composed primarily of American colonists of European descent. There were also a few freed slaves of different ethnic backgrounds. These eight companies were primarily manned by volunteers, but had some officers temporarily assigned from other units. The ninth company, commanded by Captain Nawnawampeteoonk Jacobs, was composed entirely of Indians. The Indian company was normally exclusively Mohegan Indians from Stockbridge.[136] On the St. Francis mission, however, a detachment of thirteen Mohawk Indians, which had been sent to General Amherst from Sir William Johnson, was assigned to Captain Jacobs' company. Formal training for colonial rangers was essentially nonexistent. The rugged lifestyle of the American frontier prepared most of the volunteers for the arduous duty. However, those members that had been assigned to the unit, or lacked basic frontier skills, had to develop the skills on the march.

To an extent, duty in the ranger companies was used as a training tool for the remainder of the force. General Amherst "regarded the rangers as a school in which his most promising young officers could learn the only type of warfare that could ever be successful

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[136]Parkman, II, p. 266.

in forest fighting... having learned it, they would be able, in future campaigns, to impart their knowledge to others."[137]

Rogers' independent rangers held a peculiar place in the British military establishment in America. They were raised at the direction of the Commander in Chief, paid from royal funds and were subject to regular army discipline and orders. Yet the ranger companies had no permanent status. The Commanding General had created them; he could abolish them at any time he wished. This precarious situation meant the rangers existence depended on their sustained, superior performance. The bureaucratic influences meant that they could not afford to appear inactive for an extended period. Therefore, Rogers was constantly in a position that required him to justify his rangers' worth to his seniors. On a more positive note, the pay the rangers received was quite attractive. Privates "were to be paid three shillings (New York currency) per day, three sergeants at four, an ensign at five, two lieutenants at seven, while Rogers (received) ten. Ten Spanish dollars were allowed each man for clothing, arms, and blankets."[138]

While a significant portion of their equipment was standard, ranger outfit varied somewhat from that of the regular soldiers. An account of ranger attire is provided by John Cuneo:

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[137]Roberts, p. 103. Other leaders have viewed the role of special forces in similar fashion. Elliot Cohen in his work, *Commandos and Politicians*, discusses this point at some length.

[138]Cuneo, p. 33.

"The rangers may have been clothed in their new uniforms. Green marked them as woodsmen. The outer coat was a short jacket without sleeves, whose armholes were covered and strengthened by wings similar to those worn by regular grenadiers and drummers. Underneath was a waistcoat whose sleeves, passing through the opening in the outer garment, became part of the outer uniform. Both jacket and waistcoat were lined with green serge so that collars and cuffs contrasted against the outside coarse woolen 'frieze.' Under all was worn a shirt. Buttons on front and on the cuffs were of white metal. Officers were brave with silver lace cord or looping on buttonholes and edges-at once a distinguishing mark and a strengthener of the cloth at points of extra wear. Below, linen or canvas drawers were covered by a 'skirt or short petticoat of stuff made with a waistband and one button; this is open before and does not extend quite to their knees.' Brown leggings reached up to the rangers thighs. They buttoned 'from the calf of the leg downward...like spatter dashes.' Their footwear was moccasins.

Officers on parade wore tricorns with white silver edging, but on party had hats cropped to leave only a skull covering and a flap in front. A feather or evergreen bough jauntily stuck on the side or in back announced the owner a proper cock-of- the walk. The men wore plain tricorns on parade but preferred the flat Scotch bonnets on a scout. In many ways they resembled Scotch soldiers in their 'little kilts' and the ancestral pride of many may have intentionally brought about this result.

The tools of their trade remained unchanged. The regulars' carouche (or cartridge) box had replaced the pouch hanging in front; under the right arm was a powder horn suspended from a belt looped over the left shoulder. A leather sling at the right held a bayonet and tomahawk. At the waist was a sheathed knife. Another sling over the right shoulder carried the canteen, probably the regulation metal type, hanging over the left hip. Muskets were strictly regulation issue. Haversacks carried rations; blankets were carried in rolls unless work for warmth while on the march."[139]

D. THE ST. FRANCIS RAID

1. The Approach

Several hours after sunset on September 18, 1759, Robert Rogers loaded his two hundred rangers and Indians into seventeen whale boats and slid off the shore of Crown

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[139] *Ibid.*, p. 74-75.

Point into Lake Champlain. So far as anyone knew, outside a small cadre of ranger officers and non-commissioned officers, the group was bound for a place called Sugothel.[140] The month preceding the rangers' departure for St. Francis had been spent constructing the new fort at Crown Point, cutting a road from Crown Point to Charlestown or Number Four,[141] and conducting patrols in the area surrounding Crown Point.[142] The planning and preparation that took place prior to the departure of the rangers from Crown Point was limited both by the availability of information concerning the area of operation and the amount of time the rangers had to prepare for the mission. The rangers departed without so much as an accurate map of the region they were entering. The map used by Major Rogers was drawn from memory by a Captain Starke, who had been taken through the area as an Indian prisoner. Rogers was one of the few members of the expedition that had ventured into the area. Since much of that region was uncharted at that time, this situation was common in the conduct of the entire French and Indian War.

Because the normal mode of operations was to depart on missions without sufficient information to generate a detailed plan, Rogers developed a set of Standing Orders that

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[140]Roberts, p. 89. Sugothel was a false name used to discuss the mission while maintaining operational security among the force. The text of Roberts' work indicates that most of the rangers had some idea that their destination was St. Francis but the ideas were not confirmed until after the operation was well underway. The duplicity of General Amherst's orders to Rogers was also footnoted in the *Journals of Major Robert Rogers*. However, the false name given to the town is not noted.

[141]Parkman, II, p. 268.

[142]Rogers, p. 143.

provided guidance to his rangers in any situation. These orders continue to be the foundation of ranger training:

Standing Orders, Rogers Rangers

1. Don't forget nothing.
2. Have your musket clean as a whistle, hatchet secured, sixty rounds powder and ball, and be ready to march at a minutes warning.
3. When you are on the march, act the way you would if you was sneaking up on a deer. See the enemy first.
4. Tell the truth about what you see and what you do. There is an army depending on us for correct information. You can lie all you please when you tell other folks about the Rangers, but don't never lie to a Ranger or officer.
5. Don't never take a chance you don't have to.
6. When you're on the march we march single file, far enough apart so one shot can't go through two men.
7. If we strike swamps, or soft ground, we spread out abreast, so id's hard to track us.
8. When we march, we keep moving until dark, so as to give the enemy the least chance at us.
9. When we camp, half the party stays awake while the other half sleeps.
10. If we take prisoners, we keep 'em separate till we have had time to examine them, so they can't cook up a story between 'em.
11. Don't ever march home the same way. Take a different route so you won't be ambushed.
12. No matter whether we travel in big parties or little ones, each party has to keep a scout twenty yards ahead, twenty yards on each flank and twenty yards in the rear, so the main body can't be surprised and wiped out.
13. Every night you'll be told where to meet if surrounded by a superior force.
14. Don't sit down without posting sentries.
15. Don't sleep beyond dawn. Dawn's when the French and Indian attack.
16. Don't cross a river by a regular ford.
17. If somebody's trailing you, make a circle, come back onto your tracks and ambush the folks that aim to ambush you.
18. Don't stand up when the enemy is coming against you. Kneel down, lie down, hide behind a tree.

19. Let the enemy come until he is almost close enough to touch. Then let him have it and jump out and finish him up with your hatchet.[143]

Once underway, Rogers gathered his force and informed them of their destination for that night. By sunrise, the force was ashore, with craft cached and sentries posted, at Buttonmold Bay. This was the first British raid deep into French held territory.

A small pine cone dropped from the boughs of a spruce served as the alarm that roused the ranger officers on the hill overlooking Buttonmold Bay. Seconds later came the report that two canoes each carrying six Indians and one bateaux containing thirteen French soldiers and two French officers in traditional white dress, was patrolling the shoreline near where the boats had been stashed. When the French patrol passed, Major Rogers tasked his two groups of Indian scouts.[144] He assigned his Stockbridge Indians to follow the patrol and report their further actions, and directed the Mohawk detachment to reconnoiter the area to the north as far as the mouth of Otter River, a distance of approximately ten miles. Each of the groups was to report their findings before the force moved north that evening.

Before dusk, both Indian patrols reported to Rogers. Captain Jacobs, the leader of the Stockbridge Indians, reported that the patrol completed its search of the area and moved

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[143]*United States Army Ranger Handbook* (ST21-75-2), Ranger Department, United States Army Infantry School, October 1980, p. i-iii.

[144]The Stockbridge Indian owed their allegiance to Rogers and were a permanent part of the rangers. They were rangers. The Mohawks, on the other hand, were not rangers. "The Mohawks had been sent to General Amherst by Sir William Johnson, who lived in the Mohawk Valley and was the Superintendent of Northern Indian for the British Government."(Roberts, 103) They had been assigned to Rogers by General Amherst because he could find nothing else to do with them.

off in a southerly direction until they came to a headland which provided full view of Crown Point, where they made landfall. The Mohawks reported that they found no sign of the French in the area to the north.

When darkness had once again engulfed Buttonmold Bay, the rangers eased their whaleboats back into the water and set their backs to the oars. As the group approached the mouth of Otter River, Rogers sensed something and brought the boats to a halt in the fog that had settled over the water. With the oars silent, the faint but unmistakable groaning of vessels at rest, surging against the movement of the water could be heard off the bow of the ranger flotilla. Amidst an oppressive silence, Rogers waited until the same current that warned him of the presence of the larger vessels had pushed his group out of earshot. As the whaleboats moved back towards the southern end of the river mouth, Rogers decided that the safest way to pass these vessels without risking exposure was to go where the larger vessels could not go. He directed his force to alter course to the east and passed through a shoal so shallow that the crews had to dismount and carry their boats until they reached the north edge of Otter Bay, where they stashed the craft and established a perimeter.

Immediately after the force was settled, Rogers took two of his Lieutenants and set out to conduct a reconnaissance of what he suspected to be French forces in the mouth of the Otter River. Rogers' reconnaissance proved his suspicions correct. Realizing that the Mohawk detachment, which had been assigned to scout that position the day before, had failed to report these forces, Rogers called the Mohawks to him and questioned them concerning the situation. The Mohawks told Rogers that they had been offended by his

giving them orders to scout the area, rather than asking them if they wanted to go and that once they were outside camp, they had taken a vote and determined that they did not want to spend the day scouting when they were tired from rowing the night before. Therefore, the Mohawk detachment had returned to camp and reported that they had seen nothing. Hearing the Mohawks response, Rogers replied:

> "Since our brothers the Mohawks are accustomed to do as they will-accustomed to disobey orders if they find those orders displeasing-they should be careful to serve only under Sir William Johnson. If they serve under anyone else, they will probably be shot. Since the Mohawks are our friends, I do not wish to hurt their feelings or the feelings of Sir William Johnson by shooting any of them. Neither am I willing to keep them with us any longer; for they will only eat our provisions and drink our rum and refuse to obey orders. Therefore, they must go back to Crown Point. But if they tell the truth as to why they went back, General Amherst might have them shot, so they must say they became sick. They can say they became sick from something they ate. It will seem remarkable that all the Mohawks on this expedition should become sick together, all at one time, and probably they will be called old women for doing so; but it is better to be called old women than to be shot."[145]

The attitude of the rangers toward the Mohawks, as they gathered their equipment to leave, was less than cordial. Captain Butterfield, a provincial officer from New Hampshire temporarily assigned to the rangers, seized one of the Mohawks who was attempting to take a bag of gunpowder with him. A scuffle ensued and the departing Mohawk managed to explode the bag of powder in the midst the angry rangers. Twenty-seven rangers and officers were injured in the explosion and were forced to return to Crown Point along with the

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[145]Roberts, p. 113.

thirteen Mohawks. By the end of the second day, Rogers' force was reduced to one hundred sixty men.

The third day out of Crown Point was the twentieth of September. On that day, Rogers' force passed the narrowest point of Lake Champlain and the force entered a rainstorm that was to last five days. Following another night on the lake, Rogers chose to lay to on a flat piece of land within sight of Grand Isle and Isle la Motta. The islands were wooded and covered with rocky coves and would have seemed to make much better accommodation for the tired rangers. When asked why he chose not to rest on one of the islands, Rogers responded that those islands would be where the French would stay and would be the first place they would look when they came. If he had been on the island when the French came, there would be no means of retreat and that by remaining within sight of the islands, he would know that the French were coming and could escape before his location was disclosed.

On the twenty-second of September, the water-logged rangers reached the peninsula that separates Missisquoi from Lake Champlain. From there, Rogers turned towards the southernmost point of Missisquoi Bay, where his force landed at dawn the following day. By midmorning on September twenty-third, the whaleboats were cached, the force had been paraded and informed of their destination for that day, and were moving out for the northeastern tip of Missisquoi Bay from where they would turn inland for the ninety mile leg to the St. Francis River. Each man carried provisions for two weeks. Rogers left two of his

Stockbridge Indians, Konkapot and Lieutenant Solomon, with the boats to watch for the French. That night the rain stopped.

After two days, the rangers reached the northern tip of Missisquoi Bay and stopped at dusk on a dry ridge that provided a good view of their path. When the sun dropped below the horizon, the temperature followed. Ice began to form on the wet clothes and blankets of the rangers, but Rogers allowed no fires. Shortly after the force was settled, one of the rangers on the perimeter, Sergeant Bradley, came running into the center of camp with the two Stockbridge Indians that had been left to watch the rear. The sergeant brought the two scouts to Major Rogers. The conversation between Rogers and Lieutenant Solomon revealed that at sundown the day before four canoes and twenty bateaux, each loaded with twenty French soldiers, had found the point where Rogers' force had stashed their boats and supplies. The French force, which amounted to four hundred French and between forty and fifty Indians, had remained on the scene that night, because it had grown too dark to track the rangers. During the night, the French commander had split his force into two groups of two hundred. The following morning, two hundred French and fifty Indians would be sent in pursuit of Rogers. From this information, Rogers determined that he had roughly a one day advantage over the French that pursued him.

Before dawn, the rangers were on the march again, moving at top speed and heading inland toward their objective. That day, the twenty-sixth of September, the rangers' ninth day out of Crown Point, they entered a bog from which they did not emerge for another nine

days. By the time the rangers again saw dry land, on the fourth of October, they had lost another eleven men. Early on the morning of the fifth, Rogers and his men arrived at the St. Francis River, about ten miles from the village of St. Francis. At this point, Rogers decided to ford the river. When the force reassembled on the opposite bank of the St. Francis, their numbers were one hundred forty-two, five of which had lost their muskets. That night the rangers made camp at what was to be their objective rally point, about three miles from the village.

Once the force was settled, Rogers left orders for the men to sleep half at a time in the normal fashion, and took Lieutenant Turner and Ensign Avery to get a look at the town. Upon returning, he called the entire force together and addressed them as follows:

> "Now pay attention! Lieutenant Turner and Ensign Avery went with me to take a look at the town. It stretched along the high bank, just the right size and position for an attack, and the trail leads straight to it. Everything's in our favor-even the wind. It's in the west, ant the dogs can't get our smell...We went up trees and watched 'em. They haven't got a sentry out-not one! They've been dancing nearly all night. They were dancing when we got there, and dancing when we came away at midnight-howling and whooping and having a hell of a time. Maybe they're drunk, but don't count on it...Now bear this in mind...We can't waste time! We got to work fast and get away, because they'll be after us like hornets. We're under orders to wipe out this town, so see you do it! There's only one way to do it and that's to kill every Indian capable of bearing arms. Kill 'em quick and kill 'em dead! Don't let a damned Indian get away, provided he's big enough to fight. But for God's sake don't kill any of our own Indian, and don't kill any white captives. Our own Indian have white stripes painted around their bodies, and the tops of their heads are painted white. As for captives, there'll be some around; so keep your eyes open and don't make mistakes....Our food's gone. So's our clothes. We'll need food and clothes if we expect to be alive this time next week... Here's the way we'll do it. We'll move up to the edge of the woods

and wait for daylight. Captain Ogden's detachment and Captain Jacobs' Indian will attack the right of the town. That's the downstream end, and downstream's the way they'll run if they get the chance."[146]

The plan was further broken down to the officers and noncommissioned officers as follows:

"We were to move out of the woods in a long line, Captain Ogden, Captain Jacobs, Lieutenant Farrington, and Lieutenant Grant leading; in the center, Lieutenant Dunbar, Lieutenant Turner and Ensign Avery; in the rear, Lieutenant Jenkins, Lieutenant Campbell, and Lieutenant Curgill. When Rogers whistled, the officers and their sergeants were to break down the doors of the houses; and the rest of us, ten paces back, were to wait for the Indian to come out. One man from each detachment was to hunt out a kettle, find food to fill it, take the kettle to a common center, and get the food to cooking as soon as possible

Rogers himself would be at the downstream end of the town-in case any one wanted him, he said. Prisoners were to be brought to Lieutenant Dunbar who would halt his detachment at the drum."[147]

2. The Assault

As planned, the rangers moved across the open area in the early morning light. When the sweep lines halted, awaiting Rogers' whistle, the time was 0517. The town was silent. Rogers' whistle and the rangers were in motion. The crash of the first door transformed what had been a placidly sleeping town into a cacophony of screams, crashes, and seemingly unending musket fire. By 0610, the mayhem subsided and the remains of the village was engulfed in a smoky silence. The dead, which numbered more than two hundred, were stacked in rows along the river. Designated rangers were preparing food, gathering clothing, and restaging gear for the next leg of the mission, while other rangers were setting fire to the

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[146]*Ibid.*, p. 147-148.

[147]*Ibid.*, p. 148.

remains of the town. The women, children and prisoners were corralled by the drum, and Rogers was beginning his interrogation.

Through interrogation of the Indian captives, Rogers learned that the French and Indians had been aware of his mission for some time, but had anticipated that his force would target another village called Wigwam Martinique. The prisoners in St. Francis knew that the French had found the rangers' boats and how many boats there had been. One of the prisoners told Rogers of the disposition of French and Indian forces in the area. This prisoner, a European woman who had been captured by the Indians seven years earlier after watching them murder her husband and infant child, reported to Rogers that "French officers came up here five days ago and made an oration. Fifteen young men went with them to Wigwam Martinique. They said that's where Rogers was going."[148] She also told Rogers that there were four hundred French at Wigwam Martinique, and another three hundred at the point where the St. Francis River joined the St. Lawrence, just four miles from the village of St. Francis. Other European prisoners informed Rogers that there had been two hundred warriors in the village that morning and that thirty had accompanied the French to Wigwam Martinique. This information confirmed Rogers' other reports, as well as the body count.

After Rogers had finished interrogating the European prisoners, he had all the remaining Indians gathered before him. Using Captain Jacobs as a translator, Rogers said:

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[148]*Ibid.*, p. 161.

"Tell these Prisoners I'm letting them go so that they can take a message to their people. They're to tell their people that it was I, Wobi Madaondo[149], who burned their town and killed their young men. Rogers did it, but he never would have done it if they had behaved honorably toward the Great Father across the water and toward the children of the Great Father...Tell 'em, that what has been done was done because they trampled on the white flag sent to them by the Great Father. If the white flags of the Great Father are not honored, those who dishonor them will be destroyed. On the poles before their houses were the scalps of six hundred of our white brothers, but so far, I have slain only two hundred of their people in return. But if this town again rises from the ashes, and sends other young men to take the scalps of our people, Rogers will have no mercy in St. Francis or anybody he finds the next time he comes...Tell 'em just one more thing. Tell 'em to say that if we are followed, it will be bad for those who follow. Bad! Tell 'em Wobi Madaondo himself said it. And tell 'em this shows how much he fears being caught: he will go home by way of Lake Memphremagog."[150]

3. The Escape

When his dealings with the St. Francis villagers were complete, Rogers paraded his force and moved out. With the French forces less than four miles away, their scouts had almost certainly seen the raid and would be into the area before long. Rogers' force moved at breakneck speed heading south along the river, past the point where they had crossed the day before. Rogers' orders were that the force would stop for five minutes each hour to allow for the requirements of nature and to prevent straggling. There were no traces of sunlight left by the time the force stopped for the evening. They had covered more than seventeen miles. The rangers broke camp and resumed their flight more than two hours before sunrise. By

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[149]Wobi Modaondo is the name by which the Indians referred to Rogers. It translates to "White Devil."

[150]Roberts, p. 165-167.

mid-afternoon, the force had covered another fifteen miles and the trail began to pinch out. Rogers had been informed that the trail would become less pronounced along the way by Captain Starke, who had been brought down the east side of the river several years earlier. After some consideration and discussion with his officers and two of the St. Francis Indians he had brought along, Rogers reached a decision saying:

> "I guess we're alright. If Starke came down this side of the river we can go up it. I figure we'd be better off on this side anyway. If the French take the other trail and cross the river to look for us they'll have a hell of a time locating us. If they stay on this side, they can't go faster than we can."[151]

Once the decision was made, Rogers resumed the pace and didn't stop until all sign of light had once again disappeared from the sky.

The third day of the rangers' retreat from St. Francis was the eighth day of October. That morning, the force once again entered a bog and was able to make only eight miles. By Rogers' estimation at the conclusion of that day's march, the rangers were roughly forty miles from Lake Memphremagog and one hundred ten miles from Ammonusuc. If Rogers estimate was correct, he and his force were perhaps two weeks away from their scheduled resupply point at Ammonusuc and, given the proximity of the French force, they could not afford to stop to forage or hunt for food. Fully aware of the implications of this situation, Rogers directed his officers to assess the amount of corn remaining for each man. He then ordered that every man divide the corn into portions that amounted to one-half cup of corn per man per day.

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[151] *Ibid.*, p. 179.

The food issue settled, the force attempted to get what rest they could in the remainder of the night. By dawn, the force had been marching for more than two hours through the flatlands where the St. Francis shallows and winds like a huge snake. On the tenth of October, the rangers again moved into hilly country and, by the eleventh, mountains were visible to the south.

Rogers pressed the force onward. On the thirteenth of October, the eighth day of the rangers' retreat from St. Francis, the force reached Memphremagog. The famished rangers could think of nothing but food by that point. They tried desperately to convince Rogers to stop long enough to forage and hunt for food. Rogers was adamant, but relented after his officers appealed to him to allow the force to split into smaller groups that could forage efficiently while they continued to move toward Ammonusuc. That night Rogers held council with the entire force, and provided them with directions to the resupply point and had one copy of the area map made for each group. The following morning the weather grew worse, and just before midday, Rogers dispersed his force, allowing all who desired to remain with his group. The force split into ten groups. After the groups dispersed, they moved toward the river. At least two of the groups chose to chance the river crossing in the inclement weather; most of the groups chose to camp, get some desperately needed rest, and wait until the following morning to attempt the crossing.

One of the groups that crossed, camped a short distance on the opposite side, too exhausted to carry on. The following morning, the group, under the command of Ensign Avery, awoke to the sounds of blood-curdling screams and the frenzied howls of Indians.

Ensign Avery moved back toward the river to see what was happening. He stood aghast when he saw that the rangers who had failed to cross the river had been surrounded, and were being slaughtered. Avery's squad of eleven men was incapable of rendering assistance to the rangers who had been condemned by their own exhaustion. After twice being ambushed and losing more than half of his squad, Ensign Avery and a few of his rangers caught up with Rogers' element on the sixteenth of October. Rogers' element had crossed the river after the force dispersed two days earlier, and had not stopped until nightfall. They had avoided all French and Indian contact.

Later that day, two more of Avery's rangers that had escaped after being taken captive by the Indians, rejoined the group. From these rangers, Rogers learned that the French and Indians that had been pursuing them were scarcely in better condition than the rangers. Additionally, the rangers informed Rogers that the group of Indians that had captured them had broken off the chase and turned back toward their homes. Even after hearing this, Rogers was unwilling to slow his pace. He did, however, allow the group to forage and build a small fire for cooking that night. The next morning, Rogers pushed the force onward toward Ammonusuc, where they were to be resupplied. On the twentieth of October, the remaining rangers reached the Cohase Intervales. It was the first time they had been out of the forest since they left St. Francis fifteen days earlier. Two days later, Rogers smelled smoke. The following day the force arrived at Ammonusuc, and found the point where their food was to be. As they approached, the rangers fired musket shots to signal the group sent to guard their supplies that they were in the area. When the rangers reached the site, only the

still burning embers of the security force's fire remained. The force had mistaken their musket fire for that of the enemy and had evacuated the sight and taken the supplies with them.

The rangers, starved nearly to death, exhausted beyond all concept of human endurance, were inconsolable. After all they had overcome to reach this point, they had been betrayed by their own force. His energy waning, Rogers roused the exhausted rangers, got them into an old outpost, and set about gathering food for the force. By the twenty-seventh of October, Rogers had stabilized his force, revived some of their energies by foraging for food, devised a plan to get himself, Captain Ogden, and two others the sixty miles to Number Four, where he knew the supplies had to have been taken, and built a raft to get them there.

On the thirty-first of October, twenty-two days since the rangers had been limited to one handful of corn per day, twenty-five days after they had razed the village of St. Francis, forty-four days after they had left Crown Point, Major Robert Rogers stumbled into Number Four, secured the supplies for his remaining rangers, and headed back up the river.

E. ANALYSIS

1. Summary

The rangers' "difficult mission to capture and destroy the village of St. Francis"[152] can be considered nothing less than a complete success. The primary objective of the mission was to "attack the enemy's settlements on the south-side of the River St. Lawrence, in such

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[152]Dupuy, p. 638.

a manner as you shall judge most effectual to disgrace the enemy."[153] The village of St. Francis was razed with French and Indian forces barely out of earshot. One French and Indian force was at Wigwam Martinique, eight miles from the village. A second force was less than four miles away, near the point where the St. Francis River feeds into the St. Lawrence, while a third French and Indian force was less than a days march behind Rogers coming up from Missisqoui Bay. Scouts from all three forces had to have seen smoke from the burning village, even if they had not heard the reports of the rangers' muskets. The fact that the village was successfully razed with three French controlled forces close by was, in and of itself, enough to disgrace the French. That Rogers and a significant portion of his force returned safely to British held territory, despite the fact that the French knew Rogers' route in advance, magnified the accomplishment.

In consideration of subsidiary goals, the raid not only chastised the St. Francis Indians for taking Captain Kennedy and his detachment captive while they were under a flag of truce, it sent the message to the other Indians in the region that the British were ready, willing, and able to bring the war into their villages, but would not do so without discretion. The fact that the British only raided the village of the Indians that had violated a flag of truce and did not torture the population or kill the women and children, signalled to the other Indians in the area the price that could be exacted from them.

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[153]Rogers, p. 144.

2. The Role of Surprise

Combined French and Indian forces discovered the seventeen whaleboats left by the rangers less than five days after the force left Crown Point, nearly two weeks before the rangers charged across the clearing into the village of St. Francis. During this time, word spread throughout the villages that "Wobi Modaondo" was coming with a force of less than two hundred men. French representatives had been through the villages recruiting warriors to go and fight the white devil. Since there was a French and Indian force tracking Rogers and his men, it can be assumed that the French command had a rough idea of the location of Rogers' force. Yet, Rogers was able to gain tactical surprise at the point of the assault though the enemy had warning. Rogers' achievement of surprise on the village was due not to the lack of intelligence on the part of the French and Indians, but to the "unwillingness of (their) leaders to believe the intelligence or to react to it with sufficient dispatch."[154] The rangers were able to achieve near complete tactical surprise against the St. Francis Indians because the Indians failed to maintain a sufficient watch. The Indians failed to post a watch because they chose to believe that Rogers was going to attack Wigwam Martinique.

The assault was the only portion of the mission in which Rogers advantage can be attributed to surprise. As discussed earlier, Rogers' movements had been discovered by the French and Indians early in his approach and the French had enough time to position two superior forces ahead of Rogers in position to surround him if he continued to act as they

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[154]Betts, p. 4.

expected. Rogers intentionally exposed his intentions for departing the area in order to further disgrace the French and Indian forces. In this phase of the operation, the enemy knew both where Rogers was going and the route he intended to take.[155] By all indication, Robert Rogers and his rangers should have been doomed.

3. The Cybernetic Approach

Rogers' success in the St. Francis raid, and the fact that he and much of his force returned safely from the mission, cannot be attributed to the presence of the element of surprise. As previously discussed, Rogers actions were known to the French forces throughout the majority of the operation. The survival of Rogers and his men, not to mention the success of the raid, depended on the ability of the rangers to remain one step ahead of their opponent. At certain points in the operation, the rangers' edge was dependent on their ability to outmarch their pursuers. At other times, maintaining the edge required significant consideration of probable enemy intentions and their likely actions based on those intentions. Whatever the requirements, Rogers and his rangers were able to maintain relative superiority over the French and Indian forces for the majority of the operation. During the period when the rangers lost their relative advantage, they were repeatedly ambushed and fell into the lethal clutches of the physical superiority of the French and Indian force.

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[155]The assault phase of this operation does not represent the most demanding test of the non-essential nature of surprise. However, it should be noted that Rogers was able to gain tactical surprise during the assault because he had been able to operate within the decision loop of the French throughout the approach phase of the operation.

What allowed Rogers' rangers to achieve relative superiority over the French and Indians, and to regain the initiative after it had been lost? Major Rogers use of a cybernetic approach to the conduct of the operation. Robert Rogers was fully aware of the capabilities of his force. He knew its strengths, its vulnerabilities, and the limits of the demands he could place on his rangers. By concentrating on the strengths of his force, speed, mobility, and endurance, Rogers was able to exploit the vulnerabilities of the French and Indians. One of the French vulnerabilities was the fact that they could not maintain a strong defensive force in every village in the area. Therefore, they had to select the points that were most critical to them and protect these points, while allowing the other villages to be vulnerable to attack. From the French point of view, the most critical points were the river junction and the centrally located village of Martinique. Another French vulnerability which Rogers exploited, was the makeup of the French forces in the area. The French forces, as evidenced by the sightings of Rogers' scouts, were strictly conventional. These forces were much less mobile than the rangers, both in physical mobility and in organizational responsiveness.

Conversely, by using the strengths of his force to maintain the initiative and control the direction of the operation, Rogers was able to avoid exposing the vulnerabilities of his force, particularly its numerical weakness and lack of logistical support, to the corresponding French strengths. The rapid movement of Rogers and his rangers denied the French the opportunity to concentrate their forces in a manner that could be directed against them. Additionally, the rangers' pace forced the French and Indians to break their lines of communication with their support base, in order to effectively maintain the chase.

Another element that allowed Robert Rogers to maintain a cybernetic advantage over his enemy, was the manner in which he used his fundamental understanding of the environment in which he operated and the predispositions and capabilities of his enemies. Every move Rogers made was based on what he thought the French were most likely to do at that point or how they would react. The actions of Major Robert Rogers during the St. Francis mission exemplify the advantage that can be gained by a small force through the employment of a cybernetic approach to the conduct of operations. The first means of analyzing the value of the cybernetic approach in the operation will be to test the hypothetical propositions based on the concept.

4. Testable Hypotheses

Hypothesis 1: *Surprise is an important, but non-critical, element in the success of special operations.*

The validity of this hypothesis is supported by the St. Francis raid. Had the rangers been able to make their approach to the village without being discovered, the French and Indian forces would not have been in as high of a state of readiness in that vicinity. Even though the forces in the region were actively involved in a campaign against the British, the likely zone of operations for the forces was over a hundred miles south of the village and the forces in that area would not have likely been concentrated in the manner that they were or in the heightened readiness posture that they were in. Had the forces in the area around St. Francis been surprised by the raid, Rogers' trail would have been cold before the French and Indians could have reacted. However, surprise was not a significant issue in the success of

the operation. The only portion of the operation in which it played a role was during the actual assault on the village. The success of the remainder of the operation was achieved in spite of lost surprise.

Hypothesis 2: *A relative advantage can be gained over the enemy, regardless of whether surprise is a factor, by employing a cybernetic approach in order to operate within the enemy's decision loop.*

Throughout the operation Rogers and his rangers were able to remain a step ahead of the French and Indian forces eventhough their general position, direction of movement, intent, and force disposition were known. Rogers was able to achieve this by considering the likely action of his enemy when planning his actions and by posing the strengths of his force against the vulnerabilities of his enemy. In numerous instances, Rogers chose what would seem to have been the least desirable course of action because he knew that the enemy would either not think that to be a likely course or that the negative aspects of the course of action would have greater impact on his enemy than on his force. One example of this was when Rogers chose to make camp in the marsh, in view of more desirable ground because he knew that the French would look to the higher ground first, thereby providing him with enough warning to move his force. Another example was during the early part of the escape, when Rogers decided to push on through unbroken ground rather than cross the river and follow the trail because he knew that the rugged terrain would have a greater impact on the French than it would on his rangers. By employing a cybernetic approach, Rogers managed to retain the initiative and establish a measure of control over the tempo of the operation and the actions of his enemy.

Hypothesis 3.1: *Through the employment of a cybernetic approach, a small force can maintain relative superiority over a stronger force for extended periods.*

From the outset of the operation, Rogers considered the both the capabilities of his force, those of the opposing force, the predispositions of the enemy commander, and the likely course of action of his enemy throughout the operation. The only point when Rogers failed to make his decisions based on these considerations, was the day after his force reached Memphremagog, when he decided to allow his force to disperse in order to increase their chances of finding food. At this point, Rogers' concern for the welfare of his troops, in terms of sustenance, outweighed his concern for the enemy. Part of his reasoning for this could have been that the force that was pursuing him would have had to have been keeping pace with his force in order to engage the dispersed elements, which would mean that the enemy would be in similar condition to his troops and that their pursuit would soon be broken off. However, the force that was closest to the rangers when they dispersed was largely composed of Indians who were driven by a desire to revenge the assault and were very close behind the rangers when they dispersed. By dawn the following morning, the primarily Indian force had caught up with the trailing elements of the rangers and set up ambushes in which the majority of those ranger elements were decimated. Those elements aside, Rogers and his rangers were able to maintain a critical advantage over their opposition for a period of more than thirty days.

Hypothesis 3.2: *In utilizing the cybernetic approach, the duration of the operation is of much less importance than the action-reaction differential between the two forces involved in force-on-force interaction.*

During the entirety of the operation, the advantage enjoyed by Rogers and his rangers rarely consisted of more than a few hours march, and often amounted to a matter of minutes or the breadth of a river. Regardless of the magnitude of the advantage of the operation, the fact that Rogers was able to evaluate his surroundings, make and implement his decisions more effectively and in a more timely fashion than his opponent provided him with the initiative, and therefore, an element of control over the conduct of the operation. Force-on-force interaction, as defined, is an interactive, iterated process. The interactive nature of the process is illustrated by Rogers' ability to enact a measure of control over his enemy's actions by carefully selecting his own actions. The iterated nature of the process is illustrated by Rogers' incorporation of his opponent's response to prior interactions into his decision calculus. By understanding these two elements of force-on-force interaction and utilizing them as a part of a cybernetic approach to his conduct of operations, Rogers was able to establish and maintain relative superiority over his opponent for more than thirty days after his presence and location had been disclosed. Throughout the operation, the critical element was Rogers' ability to act in a manner that forced the enemy to react and allowed Rogers to retain the initiative. The number of iterations of the process was not critical, so long as Rogers was able to maintain an advantage in each iteration.

On the other hand, the actual duration of the operation did effect Rogers' actions. As Rogers' force become exhausted, his ability to base his decisions solely on the disposition

and likely actions of the enemy was eroded by his concern for the welfare of his troops and their ability to function effectively. However, by maintaining the initiative and forcing the enemy to be subjected to the same denigration as his force, Rogers was able to extend significantly the period in which he maintained an advantage over the enemy. This advantage tilted the scales in favor of Rogers' rangers and allowed for the survival of a significant portion of his force.

Hypothesis 4: *While the cybernetic approach has the capability to operate independent of other elements that can lead to successful operations, it can also be used in conjunction with these elements and provides a significant force multiplier in this role.*

The independent operation of the cybernetic approach can be seen primarily during the rangers' approach to the St. Francis village. During this portion of the operation, the French knew his strength, direction of transit, and general location of his target. The force that was pursuing Rogers was larger than his, but not significantly. Therefore, the pursuing force should have been able to keep pace with the rangers. Additionally, the French and Indian forces were operating on familiar territory, which should have allowed them to move more effectively in the area. Rogers was able to avoid contact with them primarily by considering their likely actions in various situations. He chose his bivouac sights, river crossings, and tactical disposition while on the march with the his pursuers in mind. This allowed Rogers to be aware of enemy movements and force disposition with sufficient timeliness so as to facilitate prediction of enemy movements.

Rogers also used the cybernetic approach to amplify the effects of other elements, such as deception, surprise and speed, during the operation. Examples of the use of the

cybernetic approach to multiply the effects of deception and surprise can be seen in the assault on the village of St. Francis. Before the operation was undertaken, two operation plans were constructed: one for public release, and another for execution. The plan for public release assigned the target of the operation a false name. The name assigned the target, Sugothel, was not actually a village anywhere in the area. This action increased the uncertainty among the French and limited their ability to effectively prepare defenses. This deception also forced the French into a position to select the most likely target for the raid based on their predispositions on the situation. The French predictably chose to protect what they perceived to be the critical area, the junction of the St. Francis and St. Lawrence Rivers. Rogers' means of approach, heading north from Missisquoi Bay toward the general vicinity of the point where the two rivers met, confirmed the French assumptions about his intentions. The French and Indian forces were concentrated in positions that would facilitate protection of that area and entrapment of the ranger force once they had committed to action in the area. By stopping short of the anticipated target and making a strike against the village of St. Francis, Rogers was able to create a temporal advantage over the French. When he questioned the prisoners in the village, they confirmed the fact that the French had anticipated a strike, either at the junction about four miles further down river, or at Wigwam Martinique. In either case, the unengaged force could be brought to bear in the rangers' rear. Had Rogers attacked one of the anticipated sights, he may have been able to generate some advantage by attacking the enemy at a time or in a manner for which he was unprepared, but

the advantage gained by such action would have been insufficient to overcome the forces that would have rapidly been brought in opposition.

Hypothesis 5: *Special operations forces have intrinsic qualities that suit them well to employ the cybernetic approach.*

The French and Indian forces were prepared for what they anticipated to be Rogers' intended actions. However, when faced with a change in the situation, the forces were unable to react quickly enough to be effective. The planning and support required to move the conventional French forces in response to Rogers' actions allowed the rangers to successfully assault the village of St. Francis and withdraw, despite the fact that they were virtually surrounded by numerically superior French and Indian forces. Rogers was able to do this because he knew that by the time his opponent received, interpreted, and acted on the signals he sent, he and his rangers could be miles away. There were certain qualities intrinsic to Rogers' force that allowed him to affect this interaction. These elements, including flexibility, responsiveness, and internal communications capabilities, all resulted from the fact that Rogers was smaller than the force he opposed.

The size of Rogers' rangers facilitated flexibility because Rogers was able to be highly selective in the composition of his force. The core of the nine ranger companies was composed of volunteers who met the requirements Rogers demanded. Even after the operation commenced, Rogers only allowed those members to continue that could keep pace with him and could be trusted to execute their orders faithfully. The quality of the rangers

as individuals allowed the members to carry out a more broad range of tasks than a conventional soldier would have been.

Most of Rogers' force had been operating together for an extended period and knew what was expected of them in a wide variety of situations. Therefore, when a new situation was presented, it was likely that the situation was at least similar to another that the force had faced before. Even when the situation was not similar to other situations, Rogers had an in depth understanding of the capabilities of his force and knew how they would respond to the challenges that faced them. This intimate knowledge, which came from extended close interaction, greatly enhanced the responsiveness of the rangers. The French forces Rogers faced did not meet the same standards of selection as the rangers and had not likely been operating together for as long or in as many varied situations as the rangers had. Therefore, when commands were given to the French forces, the rapidity and efficiency that could be anticipated by the commanders was likely lower than that which Rogers demanded of his rangers.

One of the most critical elements that is intrinsic to small forces and facilitated the employment of a cybernetic approach is the efficiency with which internally communicated directions are executed. Smaller forces often have flatter organizational structures and, therefore have shorter lines of communication, which allows less room for misinterpretation and decreases the time of transmission. The chain of communication in a larger, conventional force is inherently slower by nature of the hierarchically structured path that signals must follow. Here again, this advantage is relative. In the case of Rogers' assault on

the village of St. Francis, he was able to brief his entire force on the situation and the plan to be executed in person, leaving no room for misinterpretation of the plan. By doing so, Rogers also enabled the force to be prepared to begin executing the plan within a matter of minutes. The chain of communications of the French and Indian forces, on the other hand, followed a more hierarchical path and slowed the dispersal of critical information and the implementation of the commands. The result of these elements was an more efficient ranger organization operating against a comparatively sluggish French and Indian force.

5. Model Application

The operations conducted by Rogers' rangers and other similar units during this period would be considered haphazard by modern standards. The driving factor behind the manner of operational conduct during the period was the lack of detailed or up-to-date information concerning the area of operation. Therefore, the operational and tactical planning phases of Rogers' operations tended to be exclusive evolutions. The operational plan, as presented to Rogers by General Amherst, was very general and did not attempt to provide tactical guidance to the commander. However, on the lower operational level, Rogers' assignment fulfilled most elements of the planning phase of the model.

The first action required for the eventual success of the St. Francis raid was the identification of the critical nodes of influence. Proper identification of these nodes not only ensured that the raid would stand good chances of success, it also ensured the that the raid would serve the greater goals of the campaign. Had Rogers' mission been directed at the wrong target or conducted in the wrong fashion, the mission would not have had the desired

effect on the enemy; or in terms of communications theory, the intended signal would not have been properly received and understood by the target. By choosing to attack the St. Francis Indians, General Amherst selected a point which was most likely to carry his intended message to his targets. The primary target of Amherst's signal was the Indians in the area around St. Francis which provided support to the French. Secondary targets of Amherst's signal were the French forces in the area and the British subjects that had been forced off their claims by French sponsored Indian raiding parties.

Once the critical nodes of influence, that is to say the target of the intended signal, had been selected, the British commander had to identify the appropriate means of exploiting the critical node of influence. For General Amherst, the best means available were Major Robert Rogers and his rangers. By using Rogers' rangers in a selective raid against the St. Francis Indians, Amherst effectively transmitted the desired message to the targets. The ranger raid was selective in that it effectively removed the fighting capability of that group of Indians and punished them for their actions, without acting in the same indiscriminate fashion that the Indian raiding parties had. Additionally, leaving the women and children without a village to live in or stores to use ensured that the message would be spread to the other villages in the area, because the survivors would have to move to other villages to survive. Furthermore, the fact that the target was located deep within French held territory amplified the sense of vulnerability that accompanied the refugees message.

Developing the plan to exploit the critical node of influence also required consideration of the strengths and vulnerabilities of the forces available to General Amherst,

as well as those of the French and Indian forces in the area. The French forces in the region were present in sufficient numbers so that an assault on the village of St. Francis was not feasible. The expenditure of blood and treasure that would have been required to move a conventional force that far into French held territory, assault a fortified village, and either hold the village or retreat with the entire force back to British controlled territory would outweigh the benefits of the mission. Part of the reason for the non-feasibility of the mission for a conventional force lay in the fact that the rate of movement for a conventional force operating that far into enemy territory would allow the French and Indians time to concentrate their forces either along the path of the British force, or at the target. If the French and Indians were able to intercept the British force, the mission would likely end as a humiliation for the British. Therefore, this means of attacking the village stood little chance of sending the desired message to the targets.

By using Rogers' rangers to move into the region and strike the target before the French could react, General Amherst could strike a significant blow to the French deep within their own territory at a relatively low cost to himself. When considered on the operational level, Rogers' mission would become a success once the village had been destroyed. Had the entire ranger force been lost during their trek back to friendly lines, the mission would have accomplished its goal at an acceptable price. However, the fact that Rogers returned safely to friendly lines with much of his force intact, made the mission a total success.

From the tactical point of view, Robert Rogers was intimately concerned with the successful return of his force to friendly lines. Rogers' ability to achieve this feat required that he understand the capabilities of his force as well as those of his opponent. Rogers knew that his rangers were physically incapable of surviving a pitched confrontation with the French and Indian forces in the area, because the French far outnumbered him and were more heavily armed. However, he also knew that his smaller force could move and concentrate more quickly than the larger forces that opposed him. In attempting to always play his strengths against the enemy's weaknesses, Rogers considered the probable actions of the enemy every step of the way and based his moves on those considerations. Rogers' selection of resting sights for his force on ground that was not only less than desirable for the French forces, but also lay in good view of the grounds that would likely be selected by the French commander, allowed Rogers to provide his force with a rudimentary early warning system that would facilitate his escape before the enemy could respond.

Since Rogers' assault plan was based on near real-time information gained during his reconnaissance of the objective, there was no time available for rehearsal. Therefore, the assault plan had to be simply structured in order to facilitate a fundamental understanding of the commander's intent by every member of the force. There were three factors that directly contributed to the ability of the rangers to carry out a successful assault on the village without rehearsal. The first was the fact that the majority of the rangers involved in the operation had been operating together for an extended period and had a thorough understanding of what was expected. Secondly, because this manner of assault planning was

the norm, Rogers had developed a set of standing orders that provided basic guidance to his rangers in every situation. Finally, the temporal advantage provided by the rangers during their rapid movement to the objective, combined with the effects of the deceptive orders issued prior to the onset of the operation, allowed the rangers to attack an unprepared, though numerically superior, Indian force in the village of St. Francis.

Because the assault was executed in the same expeditious manner as the approach had been, Rogers was able to remain a step ahead of his pursuers throughout the majority of his escape, despite the fact that he publicly divulged his intended route to the enemy. The one point when Rogers lost his relative superiority, when he allowed his force to disperse, resulted from the failure of some of the element leaders to consider the actions of the enemy in calculating their own actions. Within twenty-four hours of the dispersion of the ranger force, those elements that had failed to utilize a cybernetic approach had been decimated. Rogers was able to reconsolidate some members of his force and regain relative superiority until his pursuers broke off the chase.

After the operation was completed, there were debriefings conducted primarily in the form of an initial written report from Major Rogers to General Amherst made upon his return to Number Four. This report was later followed by amplifying letters after the rangers left at Ammonusuc had been cared for. However, these debriefings appear to have been strictly between Major Rogers and General Amherst.[156] Some consideration was given to the

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[156]All of the historical works cited in this case indicate that the primary form of debriefing General Amherst received was that of written reports from Major Rogers.

support elements by word from Captain Ogden to General Amherst concerning the actions of the detachment sent to Ammonusuc with supplies for the rangers return. Captain Ogden's report resulted in the arrest of the officer responsible for the detachment.

There is no evidence of tactical debriefings among the rangers, however, there was informal evidence that the rangers incorporated lessons from former missions into their planning of the raid. Rogers reminded the men of the actions taken by the Indians to members of the rangers who had been taken captive by the Indians on former missions. Additionally, these lessons weighed into Rogers' efforts to hold his force together during the withdrawal from French territory. It is difficult to say what the long term effects of Rogers' lessons learned were on the rangers, because the unit was disbanded following the end of the conflict. However, the standing orders created by Rogers are still taught today at the U. S. Army Ranger School, as well as many other military training courses.

VI. LANGUEDOC COAST, 1808

A. BACKGROUND

The French Revolutionary and Napoleonic Wars spanned the period from 1792 to 1815. These wars were conducted by the dynasties of Europe with the goal of overthrowing the revolutionary government of France which, in turn, sought their overthrow.[157] The wars were conducted by a series of five coalitions. The first of these, which consisted of Austria, Prussia, Great Britain, Spain, the Netherlands, and Sardinia, operated between 1793 and 1797, and in the last phase, provided the first exposition of Napoleon's genius. The Second Coalition engaged in combat primarily in Northern Italy and Switzerland during 1798 and broke up in 1801 when all of the members, except for Great Britain, signed the Treaty of Lunéville. The British made a short-lived peace with the French on 27 March 1802 when they signed the Treaty of Amiens. Over the next decade, the British were involved in two more coalitions against France.

By 1808, despite the efforts of successive coalitions, the French forces under the control of Napoleon were the masters of all Europe with the exception of Russia and Great Britain. Napoleon was at his zenith. But the rise of nationalism in the various conquered nations of Europe,[158] and the continuing opposition of Great Britain, which was safe from

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[157]Hew Strachan, *European Armies and the Conduct of War*, (Boston: George Allen & Unwin, 1983).

[158]Robert Asprey *War in the Shadows: The Guerrilla in History* (New York: William Morrow and Company, 1994) contains accounts of various insurgencies that

French invasion because of her insular location and superior navy, foreshadowed his ultimate defeat..[159] The French Emperor first encountered the nationalistic spirit in Spain. In an attempt at "combining the fleets of Europe to challenge Britain's naval supremacy,"[160] Napoleon made Joseph Bonaparte, his brother, king of Spain in 1808. The Spanish, organized and subsidized by Great Britain, revolted and drove Joseph out of Madrid. The struggle that transpired over the next six years was known as the Peninsular War. The French were eventually defeated and the losses suffered on the Iberian Peninsula handicapped Napoleon in his efforts against enemies in the east and north of Europe. The British land campaign in the Peninsular War was led by Arthur Wellesley, the first Duke of Wellington. The Naval Commander was first Baron Admiral Cuthbert Collingwood, who died at sea on 7 March 1810, during the blockade of Toulon.[161] One of the officers who operated under him was a Captain named Thomas Cochrane. In the frigate *Impérieuse*, he conducted operations along the Languedoc coast that denied the use of the coastal roads and

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Napoleon faced, including the Spanish insurgency, the Tyrolean insurgency, the Pugachev rebellion, and various Russian guerrilla actions. p. 72-91.

[159]Though the nationalist uprising in Spain can be seen as the beginning of the end for Napoleon's empire, his impending doom was not readily apparent before his invasion of Russia in 1812.

[160]David Gates, *The Spanish Ulcer: A History of the Peninsular War*, (London: George Allen & Unwin, 1986), p. 5.

[161]Trevor Dupuy, *et al. The Harper Encyclopedia of Military Biography* (Edison: Castle Books, 1995) p. 182.

communications stations, to the French forces, for the majority of the latter years of the campaign.

B. THE IMPÉRIEUSE

> "It is wonderful what an amount of terrorism a small frigate is able to inspire on an enemy's coast. Actions between line-of-battle ships are, no doubt, very imposing; but for real effect I would prefer a score or two of small vessels, well handled, to any fleet of line-of-battle ships."[162]

Thomas Cochrane, the tenth Earl of Dundonald, was born at Anesfiled, Lanarkshire. He was the eldest son of Archibald, the ninth Earl, who squandered his family's wealth through scientific experiments. Thomas became a midshipman onboard a ship commanded by his uncle, Admiral Sir Alexander Cochrane in 1793. Cochrane's first command was the brig *Speedy* in 1800. 'The *Speedy* was little more than a burlesque on a vessel of war... She was about the size of an average coasting brig, her burden being 158 tons."[163] She carried fourteen four-pounders, hardly enough to be a threat, and had a crew of eighty-four men and six officers. Nonetheless, Cochrane earned his pseudonym "the Sea Wolf" by capturing "over fifty vessels and more than 500 prisoners"[164] during his first thirteen months in command of *Speedy*. Following his tour aboard *Speedy*, Cochrane commanded the frigate

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[162]Tenth Earl of Dundonald, Thomas Cochrane, *The Autobiography of a Seaman*, vol. I, (London: Richard Bentley, 1861), p. 270.

[163]Dundonald, I, p. 93.

[164]Ian Grimble, *The Sea Wolf* (London: Blonde and Briggs, 1978), p. 29.

Pallas from 1803 until 23 August 1806[165] when he was appointed to the *Impérieuse*. The *Impérieuse* was more than twice the size of *Pallas* and displaced over a thousand tons. Her complement was two hundred eighty-four men, which included thirty-five marines. Unlike the *Pallas*, whose crew Cochrane had to impress, the crew of *Impérieuse* was all volunteer. "On the 12th of September 1807 the *Impérieuse* sailed from Portsmouth to join Lord Collingwood's fleet in the Mediterranean, having in charge a sail of thirty-eight merchantmen destined for Gibraltar and Malta.[166]

Admiral Collingwood, who "succeeded Nelson in command of the Mediterranean Fleet,"[167] had been "appointed the extraordinarily difficult task of blockading the French fleet in Toulon and stamping out both enemy trade and piracy."[168] Collingwood's career at sea included service in the American War for Independence, during which he took part in the battle of Bunker Hill, where he earned promotion to Lieutenant. Additionally, Collingwood commanded four ships of the line before being promoted to Vice Admiral and being "sent with a small squadron to reinforce Nelson's Mediterranean Fleet."[169] In May 1805, Collingwood became Nelson's second in command of the Mediterranean Fleet, where he remained until Nelson's death at Trafalgar in October 1805.

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[165]Dupuy, p. 177.

[166]Dundonald, I, p. 234.

[167]Tom Pocock, *Horatio Nelson*, (New York: Alfred A. Knopf, 1988), p. 341.

[168]Grimble, p. 74.

[169]Dupuy, p. 182.

Impérieuse' first assignment in the Mediterranean was to patrol the shipping in the eastern portion of the Sea. Within a short period, Cochrane had intercepted several privateers that were not properly licensed and turned them over to the Admiralty. One of these vessels was the *King George*, a Maltese privateer with a £500 bounty offered for her capture. Cochrane encountered the corruption that was rampant in the Mediterranean when, "somebody with a financial interest in the *King George* brought his influence to bear on that sink of iniquity, the Maltese Court of Admiralty, and a license was produced under which Cochrane was fined for having interfered with what was described as a British vessel."[170] Cochrane's encounters with corruption in the Mediterranean continued when, in December 1807, Admiral Collingwood appointed him to command the Corfu Squadron that was enforcing a blockade of the Ionian Islands. While preparations were being made for his change of command, Cochrane secured permission from the Commodore he was relieving to reconnoitre the area north of Corfu until the preparations were complete. While operating in the area, Cochrane "fell in with thirteen merchantmen, as leisurely proceeding along the blockaded coast as though we had belonged to their own nation."[171] Cochrane intercepted and inspected three of the vessels and found that they carried passes issued by the man he was relieving. Cochrane, finding the situation to be less than forthright, sent the vessels to Malta to be examined by the Court of Admiralty. When Captain Campbell, the officer that

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[170]Grimble, p. 75.

[171]Dundonald, I, p. 237.

Cochrane had come to relieve, heard of Cochrane's actions, he sent a dispatch to Admiral Collingwood, complaining that Cochrane's want of discretion rendered him "unfit to be entrusted with a single ship, much less with the command of a squadron."[172] Admiral Collingwood, who by this point was near his death, recalled Cochrane without discussion and reassigned him "back to Malta to revictual his ship and thence to harass enemy shipping off the coasts of France and Spain in total independence."[173]

C. MISSION AND OBJECTIVE

During his transit from the eastern Mediterranean toward the French and Spanish coasts, Cochrane paused long enough to destroy the coastal fortifications on the islands of Majorca and Minorca. The *Impérieuse* arrived in Gibraltar on 31 May 1808 in need of refit. However, upon arrival, Cochrane received word that Napoleon had placed his brother Joseph on the Spanish throne, and that the population had risen in revolt. This action, which would bring about Wellington's Peninsular Campaign, alerted Cochrane to the fact that his stay in Gibraltar would be short. Subsequently, "from Admiral Collingwood, Cochrane received instructions that he was to give the Spaniards all the assistance in his power in their resistance to French rule."[174] The refit of the *Impérieuse* would have to wait. As soon as she was resupplied, the *Impérieuse* put to sea, headed for the Spanish coast. There were no

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[172]*Ibid.*, I, p. 238.

[173]Grimble, p. 77.

[174]*Ibid.*, p. 78.

specific targets designated in Collingwood's orders, so their interpretation was left to the judgement of Captain Cochrane. Once his initial assessment of the situation was complete, Cochrane set about fulfilling his orders.

D. LANGUEDOC

Cochrane selected the portion of the Spanish coast along the province of Catalonia. "The whole population (of this province) was up in arms" and the French adopted a strategy of "sending flying columns to major towns" in an attempt to maintain control.[175] After his arrival, Cochrane assessed the situation and determined that "since the interior was rendered unsafe by guerrillas, (the coastal) road was the indispensable supply route for the French garrisons."[176] Also located along this road was a series of French signal stations that served to relay information rapidly over vast distances. Cochrane saw these stations as critical targets in undermining French military efforts on the Peninsula.

Cochrane's first action was to announce his presence and to lay the foundation for a relationship with the indigenous people of the region. The principal French stronghold in the area was the port of Barcelona, located within one hundred miles of the French border. The French "Army of Occupation of the Eastern Pyrenees,"[177] under the command of General Count Philibert Guillaume Duhesme, numbered between twelve and thirteen thousand and

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[175]Gates, p. 59.

[176]Grimble, p. 79.

[177]Piers Mackesy, *The War in the Mediterranean 1803-1810*, (Cambridge: Harvard University Press, 1957), p. 283.

was based in Barcelona.[178] Cochrane knew that he could not hope to take the port because of the size of Duhesme's garrison. Nevertheless, he seized the opportunity to announce his presence and attempt to rouse the inhabitants of the city by sailing the *Impérieuse* to a point that was just out of range of the shore batteries, "hoisting British and Spanish colours, (and firing) a salute of 21 guns." Next he "hoisted British colours over French, and then Spanish over French, firing an additional salute."[179]

After leaving Barcelona, Captain Cochrane sailed along the coast to scout the neighboring towns and the coastal road. As a result of the reconnaissance, Cochrane devised a plan to paralyze French operations in the region by denying them use of the coastal road. The plan involved training indigenous raiding parties to harass enemy forces while he maintained the *Impérieuse* as a floating battery, ready to bombard any who should attempt to use the road. Cochrane implemented his plan when he sent ashore parties that "blew down the overhanging rocks and destroyed the bridges so effectually as to prevent the passage either of cavalry or artillery, at the same time, pointing out to the Spaniards how they might

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[178]General Duhesme had been tasked to "hold Barcelona, crush the rebels in Lerida and Manresa, and to send a column to help Moncey at Valencia."(Gates, 59) Because of commitments made in an attempt to meet these tasks, the size of Duhesme's force at Barcelona when Cochrane arrived was between six and seven thousand. The force under Duhesme's command, at that point, consisted of approximately 5,500 Italian troops and 7,000 French troops. (Gates, 59)

[179]Dundonald, I, p. 256-7.

impede the enemy's movement elsewhere along the coast."[180] Then he patrolled the area where the raiding parties had acted in order to provide bombardment against anyone who attempted to repair the damages. By doing so, Cochrane was able to completely stop the flow of supplies and reinforcements to the port of Barcelona along the coastal route.

Shortly after the partisan operations had been established, Cochrane received information that a strong French force was enroute to reinforce the garrison at Barcelona. Upon hearing this, he decided to seize and destroy the fort at Mognat, which lay along the route the French were taking to Barcelona, in order to hamper the advance of the French forces and supplies that they carried toward the besieged garrison. However, when the *Impérieuse* reached Mognat, the advance party of the French force had already arrived. Cochrane scouted the area and found roughly eight hundred guerrillas in the surrounding villages that were eager to assist him in taking the fort. Cochrane rapidly considered his options and devised a plan. His first action was to block the road between Barcelona and Mognat so that the separated French forces would be unable to assist one another. Then, after going ashore to reconnoiter the approaches to the fort, Cochrane brought the *Impérieuse* in close to bombard the fort before signalling the guerrillas, who were massed at the base of the hill, to commence the assault. However, the unruly guerrillas abandoned the plan and began the assault before the bombardment could commence. The French force saw the

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[180]*Ibid.*, p. 258. Following Cochrane's instruction, the Catalan irregulars continued to harass and draw out the French controlled forces until, "totally baffled as to how to deal with such volatile opponents, the imperial forces reverted completely to the defensive"(Gates, 61) in July 1809, and awaited the arrival of reinforcements.

hopelessness of their situation and hung out flags of surrender, but the guerrillas paid them no mind and continued the assault.[181] Cochrane saw this development, signalled his acceptance of the French surrender, and had himself and a detachment of marines rowed ashore. Once there, Cochrane "was immediately conducted to the castle where the French troops were drawn up on either side of the gate,"[182]prepared for surrender. He accepted the surrender and had the French prisoners ushered to the *Impérieuse* by his marines. With the prisoners properly disposed of, the crew "carried off four brass field pieces and threw the iron guns over their parapets before blowing up the fort at Mognat."[183]

By mid-August, Cochrane's tasks at Mognat were complete and the *Impérieuse* had sailed "beyond the cliffs of the Spanish frontier with France, and lay in the bay of Marseilles."[184] The new targets for the men of *Impérieuse* were another vital means of French communication", the signal stations that relayed both French military secrets and information concerning British naval activities up and down the coast. Some of Cochrane's men had been involved in the destruction of signal stations along the Atlantic coast of France in Pallas, and were familiar with the process. On the morning of the sixteenth of August, the

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[181]The treatment of the locals under French occupation forces was quite harsh. The treatment of those groups that were associated with the revolt was brutal. An account of the policies of the French concerning the insurgents can be found in Don Alexander's *Rod of Iron: French Counterinsurgency Policy in Aragon during the Peninsular War*, (Wilmington: Scholarly Resources, 1985).

[182]Dundonald, I, p. 263.

[183]Grimble, p. 80.

[184]*Ibid.*, p. 81.

men of *Impérieuse* destroyed their first signal station without opposition. The following morning, a detachment of ninety men was sent to destroy another station on an island located in the delta of the Rhône river. The inhabitants of the station saw the detachment approaching and fled. The station was destroyed without incident. That afternoon, the same detachment was sent to destroy a third station. Their approach to this station was hampered somewhat both by musket fire from the french detachment that attempted to defend the station and the marsh through which the group had to wade in order to carry out their assault. After a four hour struggle, the station was destroyed and the detachment returned without a single loss.

That night, Cochrane sailed back down the coast in an attempt to arrive at his next target before word of the fate of the other stations could spread. When he arrived, he found the stations had been reinforced. Cochrane saw this and chose to wait until nightfall to raid the station, hoping that the defenders would be less alert. However, when the boats approached the station, they were showered with grape shot. Cochrane recalled the boats and again waited until he thought the enemy would have decided that he had moved on to another target. Then he personally led his men back ashore and destroyed the station. Once the station was destroyed, Captain Cochrane led his men along the shore and surprised the battery that had fired upon them earlier in the night. When the battery heard the explosion from the signal station, they knew that the raiding crew had returned and opened fire. The battery, however, assumed that the raiders would approach from the sea and fired harmlessly into open water, while the *Impérieuse'* men came upon them from their rear.

As dawn broke, the raiding party, which was attempting to load two 24-pounders into boats, was alerted by a single shot from the lookout aboard *Impérieuse*, who spotted what appeared to be cavalry advancing over a nearby hill. Though Cochrane had no way of knowing the size of the approaching force, he hurried his men, and directed the small boats, in which he had mounted 9-pounders, to prepare to cover their retreat. The exhausted men redoubled their efforts on the brass cannon and were loading them into the boats as the first of the French cavalry reached the beachhead. The 9-pounders were successful in keeping the horsemen at bay until the booty and crew were aboard and the boats were out of range of the cavalry's muskets. By seven o'clock, the *Impérieuse*, with her crew and booty securely aboard, once again put to sea and reported to Admiral Collingwood, who was sailing off the coast of Toulon.

At the conclusion of what would prove to be his last meeting with Admiral Collingwood, Cochrane was detached to continue independent operations in support of the Spanish uprising. Upon returning to the waters off Marseilles, the *Impérieuse* encountered the frigate *Spartan*, commanded by Captain Jahleel Brenton. The two Captains operated together for a time with such continued superior results that it inspired the ailing Admiral Collingwood to write:

> "The activity and zeal of those gallant young men keep up my spirits, and make me equal to bear the disagreeables that happen from the contentions of some other ships. Those who do all the service give me no trouble; those who give me trouble are good for nothing."

The first combined attack of *Impérieuse* and *Spartan* was at Vendres and was a more complicated operation than Cochrane's earlier exploits. The port at Vendres was protected by "shore batteries, cavalry, infantry and even armed peasants."[185] The action was initiated with the destruction of a defended signal station and was followed by a night assault on one of the shore batteries. The assault of the battery was executed with such speed that the seamen and marines involved were able to spike the cannon, destroy their carriages, burn the barracks, and retreat, before cavalry could arrive on the scene. Once the raid was complete, the two frigates sailed along the coast, just out of range of the shore batteries, in order to agitate the French and attempt to determine the size and disposition of forces with which they would have to contend. The French, as expected, had reinforced every signal station they passed and troops were concentrated at several points along the coast.

After selecting their next target, Cochrane and Brenton decided to employ a diversion to lure some of the French forces away from the point of assault. The two captains dressed all their ships' boys in the "scarlet jackets of the marines and dispatched them in small boats and the rocket boats to a point well to the right of the real target."[186] Just as anticipated, a significant party of cavalry set off to intercept the young "marines." While the diversion unfolded, the frigates moved in on the town. They continued shoreward without firing, despite the fact that they were coming under fire from the shore batteries, until they reached

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[185]*Ibid.*, p. 83.

[186]*Ibid.*, p. 84.

a point where their broadsides could be most effective. When they reached optimum range, the frigates commenced an hour long bombardment of the town. The French cavalry did not return to the town because they were convinced that "it was clearly not where the assault was planned: this was merely a diversion while the marines made their assault further up the coast."[187] After the preparatory bombardment was complete, the real marines were landed in larger boats. When they came ashore, the French troops that remained in the town fled. While the marines were destroying the guns, the cavalry realized their mistake and headed back to the town at such a pace that the cavalry commander failed to properly evaluate the situation into which he was leading his troops. The guns of the shore batteries were silent and the two frigates were close ashore. As the cavalry approached the town, they passed within musket range of the frigates and were promptly cut down by full broadsides of grape shot. The local threat quelled, the two Captains leisurely recovered their crews and parted company.

After several months away, Cochrane returned to the Spanish frontier on 15 November 1808. Once again, *Impérieuse* announced her arrival in Barcelona by sailing brazenly into the port. This time she found the French forces, whose control had been restricted to a small section of the city, under constant desultory attack from the local irregulars. Cochrane provided what assistance he could by bombarding the French held sector, while he gathered further information on the situation in the region. During his fourth

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[187]*Ibid.*, p. 84.

day off Barcelona, Cochrane received word that a twenty-thousand-man French and Italian force under the command of General Count Honoré Reille, had marched on the frontier fortress of Rosas, which was under Catalan control and was a critical point, for the French, in maintaining a modicum control over the coast road.[188] Upon receipt of this news, *Impérieuse'* guns fell silent and she set sail for the capstone of Cochrane's exploits in the Mediterranean.

The town of Rosas was in dire straits when *Impérieuse* arrived. The beleaguered locals were anticipating the arrival of an additional six thousand Italian reinforcements for the French that were digging in around the town. Two other British frigates, the *Excellent* under Captain John West and the *Fame* under the command of Captain Richard Bennett, each of which possessed twice the armament of *Impérieuse*, had been assisting the local forces. However, neither of the frigates had been able to spare more than a few dozen men to aid in the defense of the town. The extent of the two Captain's goals had been to maintain control over the "two principal strongholds of Rosas-the citadel in the town and Fort Trinidad beyond it,"[189] in hopes that Spanish reinforcements would arrive before the Italian troops. The day prior to Cochrane's arrival, however, Captains Bennett and West decided

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[188]The forces that originally marched on Rosas, in mid-July, were eight thousand strong and were under the command of General Reille. By the end of July, General Duhesme had arrived with the bulk of his forces to assist in the siege. When Cochrane arrived, the siege had been underway for several months and the situation had been deemed untenable by the commanders on the scene.

[189]Grimble, p. 85.

that the Spanish relief force was not going to arrive, and that their situation was untenable. Consequently, they had withdrawn their troops and left the local forces to their own devices. Ironically, Cochrane's actions at Rosas, however heroic, would later be perceived as an attempt to tarnish the reputations of two senior officers.[190]

Upon arrival in Rosas bay, Cochrane had himself rowed ashore to appraise the situation. He made a detailed study of the citadel and Fort Trinidad, as well as the "positions of the French batteries that were bombarding it and of the trenches that surrounded it."[191] Having done so, Cochrane headed for *Fame* and hailed Captain Bennett, who received him and approved his plan, but elected not to participate. As Cochrane was being rowed back to *Impérieuse* to put his plan into action, he recorded the following description of Rosas:

> "Next to the sea was a fort constructed with walls some 50 feet high. Behind this and joined to it rose another fort to the height of 30 or 40 feet more, the whole presenting the appearance of a large church with a tower 110 feet high, a nave 90 feet high, and a chancel 50 feet. The tower having its back to the cliff as a matter of course sheltered the middle and lower portions of the fortress from a fire of the battery above it."[192]

Cochrane's goal was to provide as much support as possible to the besieged local forces until Spanish troops arrived. His next action was to bring the *Impérieuse* within six hundred

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[190]Both Captain Richard Bennett and Captain John West were senior to Cochrane. Captain Bennett had been promoted five years before him and Captain West had at least six years seniority over Captain Cochrane. Captain John West would go on to become Admiral of the Fleet. At the time, both Captains expressed and/or provided support for Cochrane's efforts.

[191]Grimble, p. 86.

[192]Dundonald, I, p. 302-3.

yards of the shoreline and direct her fire to suppress the batteries that were firing on Rosas and to disrupt the entrenching efforts of the French. While the suppressive fire continued, Cochrane, along with fifty of his marines and seamen, retook Fort Trinidad which Captain Bennett had evacuated the day before. By acting without delay, the small party was able to take the fort before the French troops could mount a proper defense. Once the fort was secure, Cochrane and his men set about preparing to defend the fort. A hole had been blown in the tower of the fort by the French artillery. Directly beneath the breech was one of the interior arches which spanned the deck at a height of fifty feet and would facilitate access of the assault force. Cochrane directed the men to smash the arch so that those entering the breech would be faced with a gaping fifty foot chasm. To amplify the effects of the chasm, Cochrane noted:

> "I got together all the timber at hand and constructed a huge wooden case, exactly resembling the hopper of a mill-the upper part being kept well greased with cooks' slush from the *Impérieuse*, so that to retain a hold on it was impossible. Down this, with the slightest pressure form behind, the storming party must have fallen to a depth of fifty feet and all they could have done if not killed would have been to remain prisoners at the bottom."[193]

Cochrane also made preparations for emergency evacuation of the fort by planting powder charges in the magazines with a train that would destroy the fort after a delay such that his forces could escape and any overly ambitious members of the assault team would be killed. One final measure was to have some of the ship's chains and a pile of fishhooks brought ashore, fastened together, and rigged across the opening beneath the breech so that anyone

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[193]*Ibid.*, p. 304.

who was caught in them could not hope to free himself before he could be shot. While the preparations were underway, the Catalan troops, who had been joined by fifty Irishmen serving with the Spanish forces, refilled the breach as fast as the French batteries could make it. The defensive preparations took two days to complete. During this time, the French forces transferred a second battery to the hill above the fort and increased the rate of fire on the breech such that the Catalan and Irish soldiers repairing the damage were unable to keep pace. Additionally, the French launched a night attack against the town of Rosas.

When the assault of Rosas commenced, the *Impérieuse* and the *Fame*, who had remained in accompaniment to provide support from her seventy-four guns, sailed in close and opened fire on the French. But the precise gunnery of the French artillery was able to breech the walls of the city and, by dawn, the French were in possession of the city of Rosas. The only remaining points of resistance were the citadel and Fort Trinidad. Just after sunrise, a force of two thousand Spaniards arrived, saw that the town had fallen, and "tamely disappeared back into the hills."[194] That afternoon the French brought another four batteries, which had formerly been directed against the town, to bear on Fort Trinidad. The firing of the batteries fell silent twice to offer terms of surrender to Cochrane. Both offers were refused.

Just prior to dawn the following morning, the French assault came. Cochrane's force was ready but silent as the scaling ladders hit the walls and the first of the 1200 man assault

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[194]Grimble, p. 88.

force approached the breech. The French soldiers "reached the rim of the breach and saw by the first light of dawn that horrifying chasm with its greased hopper and barbed chains."[195] Before the word could be sent back down the ladders to stop the advance, more than forty grease-covered Frenchmen had plunged to their death. As the confusion caused a moment of disorder in the assault force, the defenders opened fire on the men in the breech and ignited shells that were hung over the walls to clear the ladders and discourage any survivors on the ground from attempting the climb. As soon as the hanging shells were exploded, the defenders showered the troops at the base of the wall with hand grenades and musket fire. When the French retreated, the dead were too numerous to be carried off the field. After the assault on the fort had been repelled, the French concentrated all their batteries on the citadel. Later in the day, the French guns fell silent and the defenders of the citadel negotiated their surrender. Once the citadel of Rosas had fallen and the Spanish forces had fled, the only reason for holding Fort Trinidad, whose purpose had been to provide protection for the town, was to provide cover for the evacuation of the forces that remained within it.

Cochrane enacted his evacuation plan by signalling *Impérieuse* and *Fame*, who had been joined by the *Magnificent* of seventy-four guns, to close the shore and send boats to ferry the defenders of the fort. The French noticed Cochrane's signals, broke off the bombardment, and sent a force to take the fort. Cochrane evacuated the Catalan soldiers first, because they had been in the fort the longest. The Catalans were followed by the

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[195]*Ibid.*, p. 89.

Irishmen and finally by the crew of the *Impérieuse*. The last to leave the fort were Cochrane and a gunner who remained to ignite the powder train. The French troops sent to take the fort could have easily been through the huge breech before the defenders had all been evacuated, but remembered Cochrane's antics from their earlier assault and waited for a time after he left to take the fort. The prudence of the French troops proved to be warranted when, as Cochrane was being rowed away from the shore, the first of his powder charges ignited, destroying a significant portion of the fort.

E. ANALYSIS

1. Summary

There has been much historical debate over the significance of the Peninsular campaign in the decline of the Napoleonic Empire. There has also been debate over the accuracy of Lord Cochrane's contribution to the campaign. It is not the purpose of this work to become embroiled in the debate. For present purposes, it is enough to note that the actions of Lord Cochrane along the Languedoc coast, by any account, had significant impact on the conduct of the Peninsular campaign. Through the employment of a single thousand ton frigate and less than three hundred sailors and marines, Cochrane was able to paralyze the Mediterranean coastal communications[196] of the French Army on the Iberian Peninsula, and tie down significant numbers of French forces for the duration of the campaign. The operations were conducted in a highly flexible manner and included the employment of every

[196]In this case the term communications is intended writ large, including all means of transfer between French forces in the area.

stratagem imaginable. At the root of each of Cochrane's operations was the use of a cybernetic approach that allowed the "Sea Wolf" to determine the points at which the enemy was vulnerable and exploit those points at great cost to the enemy with remarkably little attrition to his own force.

By denying the coastal route to the French, Cochrane was able to force them to access Barcelona via a circuitous inland route along which the supply trains were subjected to continuous harassment from the Catalan guerrillas. The capture and destruction of the fortress at Mognat technically fulfilled the threat that Cochrane had signalled earlier in the harbor of Barcelona by hoisting British and Spanish colours over French. More importantly, the destruction of fortress further hampered the ability of the French to resupply the Barcelona garrison. The actions Cochrane and his men took against the signal stations paid longer term dividends to the British forces in the theater. One of the advantages gained by these operations resulted from "the care Cochrane took to deceive the enemy over the fate of their code books."[197] During each signal station raid, Cochrane burned and scattered all the papers in them in such a manner that it appeared that the code books had also been destroyed. He then sent the actual code books to Admiral Collingwood, who was able to use the books to read much of the enemy semaphore traffic concerning French and British force movements. In considering Cochrane's independent actions along the Langueodc coast, Walter Scott wrote:

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[197]Grimble, p. 82.

> "Lord Cochrane during the month of September 1808, with his single ship, kept the whole coast of Languedoc in alarm-destroyed the numerous semaphoric telegraphs, which were of the utmost consequence to the numerous coasting convoys of the French, and not only prevented any troops from being sent from that province into Spain, but even excited such dismay that 2000 men were withdrawn from Figueras to oppose him, when they would otherwise have been marching further into the peninsula. The coasting trade was entirely suspended during the alarm; yet with such consummate prudence were all Cochrane's enterprises planned and executed that not one of his men were either killed or hurt, except one, who was singed in blowing up a battery."

Though the actions at the town of Rosas and Fort Trinidad failed to prevent the French from taking possession of them, the defensive efforts delayed their fall for nearly two weeks and, in doing so, tied down nearly ten thousand French and Italian troops. The majority of these troops, along with their support trains, would otherwise have been available for deployment against Arthur Wellesley's forces. Thomas Cochrane was able to accomplish this with a force that amounted to the crew of a small frigate, fifty Irishmen, and an group of Catalan irregulars. How significantly the actions of the *Impérieuse,* and others like her, impacted the outcome of the Peninsular Campaign remains a point of considerable historic debate. However, there is little question that these actions influenced the manner in which the conflict was conducted. The consideration given does not attempt to clear or add to the debate. The point of discussion here is, how these frigate sailors, particularly those under the command of Captain Thomas Cochrane, were able to carry out these operations in full view of an enemy that was superior in both numbers and resources, for such an extended period.

2. The Role of Surprise

The first action taken by Captain Cochrane was to announce his presence by challenging the French at Barcelona. Afterward, he patrolled the coastline in full view of the local forces, including both his enemy and potential supporters. Within a few days of his arrival at Barcelona, the only questions that could have remained in the minds of Cochrane's adversaries were: what Cochrane would choose as his targets and when he would choose to strike? The French had ample reason to suspect that Cochrane would hit the very targets that he chose. First, because they were the primary items of value that were located along the coast and second, because Cochrane had carried out similar operations along the Atlantic coast of France the year before. Any doubt that remained in the minds of the French should have been erased after Cochrane's initial actions. In response to these actions, the French increased the defenses of the signal stations and moved larger forces into the area to stop the blockage of the coast road. The reaction of the French significantly limited Cochrane's ability to achieve surprise, and removed any advantage that may have been gained by doing so.

Cochrane's presence, location, intentions, and targets were well known to the French within a few days of his arrival off the Languedoc coast. Nonetheless, he was able to disrupt the operations of the French army throughout the region with a very small contingent of sailors and marines. The men who served aboard the *Impérieuse* had no special training, yet they were able to strike the critical points of the French force, virtually at will and without injury. These men were able to carry out these feats because their commander, Captain

Thomas Cochrane, employed a de facto cybernetic approach in the planning and execution of the operations.

3. The Cybernetic Approach

Thomas Cochrane had no strategic surprise during his actions along the Spanish and French frontiers. The minimal tactical surprise he achieved resulted from his use of a cybernetic approach. With each iteration, the forces that faced Cochrane were more thoroughly prepared for his arrival. His continued success was not the result of surprise. Cochrane continued to achieve a decisive advantage over numerically superior opponents, because he employed the various stratagems of war in a manner that exploited the weaknesses of his enemy while capitalizing on the strengths and protecting the weaknesses of his force. The manner in which Cochrane achieved and maintained relative superiority over his enemies thoroughly demonstrates the utility of a cybernetic approach in the conduct of special operations.

Cochrane's greatest strength was his mind. His greatest asset was the Mediterranean Sea. Cochrane used the sea throughout his operations to allow him to select points of attack that would have the greatest effect, attack those points, and retreat before his enemy could effectively respond. His amphibious capability also allowed Cochrane to move and concentrate his force more rapidly than his land based-opponent. Although it was not the primary purpose of the operations, denial of the coastal road and destruction of the signal stations served to amplify this advantage. The speed of movement of the land forces would have been slower than that of a frigate under normal circumstances (perhaps with the

exception of mounted cavalry over a relatively short distance). The closure of the coast road virtually eliminated any chance of effective reinforcement of a signal station or garrison after it had come under attack. By the time reinforcements could arrive, the crew of the *Impérieuse* had normally completed their tasks and moved offshore to a point where they would not be vulnerable to the French.

Destroying the signal stations served to benefit Cochrane in several ways. First, it amplified the communications differential between the two forces. Normally, Cochrane was operating independently and had only to coordinate his actions with the members of his crew and bands of irregulars. Even when Cochrane operated with other ships, they were able to complete their plans well out of range of enemy batteries and commence the operation after all involved had a full understanding of the concept of the operation. Secondly, on a strategic level, the recovery of French codebooks allowed the British to intercept a significant portion of the French semaphore traffic and thereby possess a greater understanding of the intentions and actions of the French forces throughout Europe and the Mediterranean. Third, elimination of signal stations, which Cochrane often did before assaulting nearby batteries, limited the ability of the garrison commanders to communicate with other nearby garrisons that could potentially lend assistance. Finally, in addition to cutting off communications between garrison commanders, destroying the signal stations immediately prior to launching the primary assault on the French strongholds often caused the defenders to concentrate their efforts toward the signal station that was under attack, allowing Cochrane's men to assault from a more vulnerable point. Even with these actions,

Cochrane's advantage often amounted to a matter of several hundred yards, or more accurately, the range and effectiveness of the *Impérieuse*' guns. On numerous occasions, Cochrane's retreat was ordered only when the French cavalry approached. When this occurred, the retreat was covered by the protective fire of the ships available.

Target selection was not the only portion of Cochrane's operations that illustrates the utility of a cybernetic approach. The manner in which he conducted his operations also shows consideration of the predisposition of both his enemies and his allies. When Cochrane conducted the assault of the fort at Mognat, the guerrillas ignored the French attempts to surrender. But, when Captain Cochrane signalled his acceptance and went ashore with a small contingent of marines, the guerrillas not only broke off their assault, they also allowed the small group of marines to take the hated French troops back to the ship as prisoners. The guerrillas could easily have overwhelmed the insignificant number of marines in their midst and decimated the unarmed French. However, they believed in Cochrane and allowed him to act in the manner he chose. Cochrane stated in his memoirs that he understood the Catalan people, because they were similar in character to the Lowland Scot. Had he not known how the guerrillas would react, he would not likely have risked his crew to retrieve the French troops. Cochrane also considered the likely actions of the French in planning his operations. One example of this is the manner in which he orchestrated the defense of Fort Trinidad. The defenses were designed with the French in mind. He knew that the greased chasm would be effective because of the manner in which the French carried out assaults. Their normal method was to gather beneath the breech and mount the scaling ladders one after

another so the movement of those at the base would force those at the top to pass through the breech and into the chasm before the flow could be stopped. He also knew the impact the hanging shells and hand grenades would have on the troops at the base of the walls, and the impression that the large number of dead and wounded would make on those soldiers that would come in the follow on assaults. Consideration of these elements allowed Cochrane to successfully evacuate his entire force when he found his position in the fort untenable.

4. Testable Hypotheses

Hypothesis 1: *Surprise is an important, but non-critical element in the success of special operations.*

Cochrane's actions along the Languedoc coast support the assertion of this hypothesis. In this case, surprise would have benefited Captain Cochrane in any one of the raids. However, his mission "writ large" required that his actions be taken in a very public manner. In addition to creating difficulties for the French in the region, Cochrane was also tasked with supporting and instigating the local forces. In many instances, the support he supplied to these forces was motivational and exemplary. Both of these types of action require actions be taken in a manner that generates significant publicity and attracts the attention of a large number of enemy troops. Cochrane was able to benefit from a certain degree of tactical surprise by employing other stratagems. The ability of the wily commander to determine which stratagem would yield the greatest benefit came from his use of a cybernetic approach.

Hypothesis 2: *A relative advantage can be gained over the enemy, regardless of whether surprise is a factor, by employing a cybernetic approach in order to operate within the enemy's decision loop.*

The very fabric of Cochrane's operations along the frontiers were designed to illicit a reaction from the forces in the region. On a strategic level, his actions were intended to impede the ability of the French to effectively counter British ground forces. On the operational level, Cochrane acted so as to incite the local population into action against the French in order to cause the French to divert forces to the area. Tactically, each of Cochrane's raids were conducted in such a manner that the French could not effectively respond to his actions. By striking at critical communications nodes, such as the signal stations and the coastal road system, Cochrane effectively controlled the actions of the French in several ways. First, he prevented them from sending much needed supplies and personnel to the front. Second, by utilizing the local population in his actions, he brought down the wrath of the French in the region, providing the locals with justification for continuing the fight. Third, an most important tactically, striking these nodes prevented the French from effectively employing their forces against him in follow-on actions.

Hypothesis 3.1: *Through the employment of a cybernetic approach, a small force can maintain relative superiority over a stronger force for extended periods of time.*

Before Cochrane arrived off Barcelona the first time, he knew the odds that he faced and he knew the tools that were available to him. By consciously considering the implications and likely responses to his actions at each juncture, Cochrane managed to maintain a critical advantage over the forces that opposed him for the duration of his

operations off the Spanish and French frontiers. There were periods during which Cochrane and his men did not have an advantage over their opponents. However, by utilizing a cybernetic approach, Cochrane was able to consider these contingencies and establish alternative plans for implementation when various situations arose. One example of this was when the men of the *Impérieuse,* on the second day of their raids on the French frontier, had to make three approaches on a reinforced station before they were successful. During each of the unsuccessful approaches, the raiding parties perceived their relative inferiority at a point that was early enough in the operation so that they could break off their engagement without losing any member of their party or divulging any indication of the rest of their plan. They were then able to move out into a position of relative safety, reevaluate the situation and continue their operation via an alternative tack. In each case, the elements that were critical in successful completion of the operations with minimal impact on their own forces were: accurately assessing the situation and being able to determine when relative superiority could not be maintained before action had progressed beyond the critical point which no action could be taken to improve the situation. The fact that Cochrane and his men always had the safety of the open sea to retreat into allowed them to select the timing and location of each engagement and greatly extended the amount of time during which they could maintain relative superiority.

Hypothesis 3.2: *In utilizing the cybernetic approach, the duration of the operation is of much less importance that the action-reaction differential between two forces involved in a force-on-force interaction.*

The raids on some of the signal stations took as little as one hour, and were successfully completed under covering fire from the *Impérieuse*. The defense of Fort Trinidad lasted nearly two weeks and ended with a similar covered withdrawal. In all of the cases, Captain Cochrane managed to maintain a critical advantage over a numerically superior opponent. His enduring advantage lay in his ability to observe the situation that developed around him and respond to it an a manner that was more rapid and more effective than his opponent. The duration of the operation did not significantly effect Cochrane's ability to assess his situation accurately and respond.

The duration of Cochrane's operations in the region did effect the preparedness of the opposing force. After the first few assaults, the French reinforced their garrisons all along the coast. While Cochrane continued to find the vulnerabilities of his targets and exploit them, the availability of the vulnerabilities continually decreased. Additionally, even though his efforts to disrupt French communications along the coast had the added benefit of slowing their response to his attacks, the concentration of French forces in the region continued to grow over the long term. These forces would eventually have constrained the operating space available to Cochrane. It is also worth mentioning that diverting a large number of French forces to the coast to defend against Cochrane paid benefits to the British efforts, and that Cochrane, or others like him could have continued to operate in the region

at a lower tempo and maintained the requirement for the inflated French presence, even if some of the operations were unsuccessful.

Hypothesis 4: *While the cybernetic approach has the capability to operate independent of other elements that can lead to successful operations, it can also be used in conjunction with these elements and provides a significant force multiplier in this role.*

There are few examples better than Thomas Cochrane to illustrate the validity of this hypothesis. Cochrane used the cybernetic approach to incorporate every stratagem available into his varied operations. In his first actions along the coast road, he made use of his ability to move in and out of range of enemy batteries and ground forces both in blocking the coast road and in preventing the French from repairing the damage. After he had established that operation, he trained the local guerrillas to continue it so that his advantage could be maintained. Afterwards, Cochrane attempted to use speed to reach the French outpost at Mognat to prevent a large force from reinforcing the garrison at Barcelona. When he arrived and found that the fort had already been taken by the French advanced party, Cochrane isolated the fort by blocking the road and then used the numerical strength of the local guerrillas to convince the French to surrender.

After Mognat, Cochrane moved in an unexpected direction, across the French frontier, and attacked a different target, the signal stations. On the first two days he was able to use speed to destroy three stations before the French could effectively respond. On the third day, the speed advantage failed and Cochrane turned to a combination of feints and diversions to gain relative superiority over the French. The list could continue through each of Cochrane's actions. In every case, he evaluated the situation, determined which stratagem

was most applicable, and acted accordingly. The employment of tools in this fashion allowed the advantage gained by each element to be maximized. Without the selective creativity availed by approaching the conduct of operations in a cybernetic fashion, Thomas Cochrane's success would have been severely limited.

Hypothesis 5: *Special operations forces have intrinsic qualities that suit them well to employ the cybernetic advantage.*

The crew of the *Impérieuse* was not a special operations force. They received no special training to prepare them for their missions. They learned their trade through action. The marines onboard were no different. On the other hand, the size of the force was minuscule in comparison to the size of the forces they faced and the crew had some institutional knowledge. The institutional knowledge resulted from the fact that a significant portion of the crew had followed Cochrane from the *Pallas*. These crew members had been involved in similar operations with Cochrane, which provided them with both a close knowledge of that type of operations and the manner in which Cochrane conducted them. Because of his well known reputation, Cochrane was able to recruit volunteers to serve in his crew rather than having to conscript them. In selecting his crew, he required that they be able to meet specific physical standards. However, the selection process went no further than the physical requirements. It can be said that Cochrane's men were a select group, by the standards of the day, but they were not what would currently be considered a special operations force.

Even so, the unique configuration of the force employed by Captain Cochrane allowed him to capitalize on the use of a cybernetic approach. The interior communications of Cochrane's force were practically uninterruptable. There were three primary factors that contributed to the rugged communications capability of the force. The first is that the size of the force was comparatively small and the organizational structure of the raiding parties was relatively flat. This meant that the lines of communication were short and left little room for noise or interference. The size of the crew also meant that any detachment sent out by Cochrane reported directly to him, if he was not with them. The second factor is that the tactical operations carried out by the force were always conducted in a small area. This limited the potential for interference in the force's communications by eliminating the need for extensive relays or couriers. Finally, the operating base of Cochrane's force was a ship and, because they depended on the ship's guns for cover, they seldom operated out of semaphore or hearing range of the ship. The size and draft of the *Impérieuse* allowed her to maneuver close to shore, so that she could respond to the needs of her raiding parties in a highly flexible manner. She could also provide unequalled surveillance of the area of operation, while the raiding parties carried out their tasks, and signal a warning to them almost instantaneously.

The French, on the other hand, were often isolated because of Cochrane's earlier raids. They were unable to respond before Cochrane's men had completed their tasks and returned to the safety of the Mediterranean. Compared to the larger French forces, Cochrane's team was a highly efficient machine.

5. Model Application

The operations conducted by Thomas Cochrane required three levels of thought during the planning phases: strategic, operational, and tactical. Strategic considerations were at the foundation of Cochrane's mission. Even though the British had been the Naval masters of the theater since Nelson's victory at Trafalgar, they could not hope to be victorious over Napoleon through the conduct of naval operations alone. Neither was the British expeditionary force, under the command of Arthur Wellesley, strong enough to defeat an unimpeded Napoleon on the Iberian Peninsula. By utilizing small vessels that were capable of conducting sustained independent operations to incite the locals to revolt and harass the French forces along the coast, however, the British High Command was able to force the French to divert enough forces to tip the balance of the campaign in favor of the future Duke of Wellington. The decision to conduct complementary operations required the British High Command to consider the possible areas of vulnerability that could be assaulted by small forces in such a manner as to cause the greatest effect on the French force disposition.

On the operational level, Cochrane considered first what he wanted to accomplish before beginning to plan his operations. Once he had a clear view of his overall goal, Thomas Cochrane conducted a thorough reconnaissance of his area of operation to determine the targets that would most likely influence the enemy in the manner he desired. The critical node he determined to be the French lines of communication along the coast. By interrupting the lines of communication, Cochrane thought he could significantly effect the actions of his enemy, because he knew that the coastal lines were the only lines that had not already

become subject to attack by the popular forces on the peninsula. Additionally, Cochrane found that he could disrupt the enemy's command-control capability by destroying the signal stations along the coast. Cochrane knew that these actions would also increase the operating space of the local irregular forces and create a greater problem for the French. The compound effect of Cochrane's actions and the increased threat posed by local guerrillas would force the French to significantly increase the number of forces located in the region. Inciting the local forces by his actions also meant that Cochrane would become a high priority target for the French. By becoming somewhat of a local hero, Cochrane would also be able to create a greater requirement for deployment of French forces when he was in an area. If the French failed to maintain control over the Catalan region, they would not only lose control of one of their holdings that was adjacent to France proper, they would begin to lose their grip on their holdings around the Mediterranean.

In planning his tactical operations, Cochrane was operating against a foe of whom he had significant knowledge. He had been operating against the French for the majority of his career. The tactics of the French were well known, and justly feared, by the time that Cochrane was assigned to operate off the Spanish coast. Cochrane was able to defeat his enemy, in part, because he understood their manner of operation.

Cochrane's tactical planning considered the vulnerabilities of each target with respect to the capabilities of his force. He also made the objective of each mission clear to those involved before the plan was executed, so that there would be no doubt as to his intent if contingencies arose during the operation. During the execution of his operations, Cochrane

preferred to be on the scene. This allowed him to assess the situation and make and implement decisions much faster and more effectively than if he were controlling them from a remote position. When Cochrane was not with his raiding parties, he passed tactical control over to the leader of the raiding party, because he knew that making decisions from a remote station would slow the implementation of his decisions and limit the flexibility of the operation.

There was little evidence of formal debriefing of the raiding parties by Cochrane. However, each of the parties reported the results of their actions to their captain in full detail in the event that he was not able to be with the party. The rapid adaptation of Cochrane's operations to the changing climate and the near non-existence of casualties in his force, attest to the fact that Cochrane incorporated the lesson he learned in each force-on-force interaction into the next iteration.

The commander of a ship is in a unique situation in that he is not only the operational commander, he is also intimately involved with logistics, intelligence, personnel management, and every other aspect in the life of his ship. For all ship captains, these competing interests impact heavily on the manner in which he conducts operations. These other interests appear to have weighed significantly on Thomas Cochrane's target selection and operational planning. Because of his limited reserves, both in manpower and armament, Cochrane could not afford to select a target that would require prolonged engagement. Extended engagements with shore-based forces would rapidly deplete his supplies and munitions and, while he would run little risk of actually losing the engagement, Cochrane

would have a very difficult time being victorious in one of these engagements. Cochrane's defense of Fort Trinidad provided the sole example of extended engagement with enemy forces. In this situation Cochrane's goals were limited to holding his ground until relief arrived. His actions from the start were not directed at defeating the French forces. Even when fully outfitted, a small frigate could not carry as many supplies as a small garrison. The primary means of resupply for ships involved in independent operations was to recover the goods that remained in the targets assaulted. Cochrane could not afford to trade punches with shore batteries for extended periods. Therefore, his operations could not be prolonged in any one spot. Thus, when he selected targets, Cochrane considered not only how the loss of the target would effect the enemy, but also how it would benefit him. He scavenged a large portion of his stores and armament from the positions he overran.

The *Impérieuse* was not the only British vessel to operate along the Mediterranean coasts during the Napoleonic Wars.[198] In all likelihood, she was one of the smaller vessels to be assigned to conduct independent operations. Yet, Thomas Cochrane was able to achieve more with her limited resources than others were with far greater assets. The tools he used in the operations were as varied as the operations themselves. The one thing that allowed Lord Cochrane to employ the tools so successfully, was his use of a cybernetic

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[198]In mid-1808, there were seventy-six vessels of war under Collingwood's command in the Mediterranean. The breakdown of the vessels is as follows: 30 ships of the line (40 or more guns), 17 frigates (20 to 40 guns), 19 sloops and brigs, 2 bomb-vessels, and 8 miscellaneous support vessels. Source, Piers Mackesy *The War in the Mediterranean, 1803-1810* (Cambridge: Harvard University Press, 1957).

approach to intentionally target the ability of the French to effectively respond to his actions by operating within their decision loop. In doing so, he took into account the strengths and vulnerabilities of his forces, as well as those of his enemy, and employed his forces in such a manner as to capitalize on his strengths, while exploiting and heightening the weaknesses of his enemy.

VII. TASK FORCE BAUM

A. BACKGROUND

By the spring of 1945, World War II was nearing its end in Europe. The German forces were falling back, but were putting up stiff resistance every step of the way. On 22 March, George S. Patton's Third Army reached the Rhine. On the 24th, his Fourth Armored Division crossed the river at Oppenheim and pushed forward another twenty-five miles toward the Main River. On the night of 26 March, a portion of Patton's Third Army pushed across the Main. While the initial elements of the force were establishing a foothold on the eastern bank of the river, a small armored column broke through the German defenses and disappeared into enemy territory.

B. MISSION AND OBJECTIVE

The town of Hammelburg, originally known as Hamulo Castellum, was founded in 716 A.D. As the central city in the Rhön Valley, the "corridor into Bavaria,"[199] Hammelburg provided defense from southern invaders. By 1945, the population of the town was roughly six thousand. A mile to the south of Hammelburg is a village called Pfaffenhausen. Another mile beyond the village, situated "on a saucer-shaped plateau atop a steep hill,"[200] is the *Hammelburg Lager*. The *lager*, or camp, was an extensive complex built as a training center

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[199]Richard Baron, Major Abe Baum, Richard Goldhurst. *Raid!: The Untold Story of Patton's Secret Mission*, (New York: G. P. Putnam's Sons, 1981), p. 57.

[200]John Toland, *The Last 100 Days*, (New York: Random House, 1965), p. 286.

by the German High Command in 1918. During the First World War, a portion of the site was used as an Allied prisoner of war compound. The compound consisted of between forty and fifty barracks. When the Second World War began, the POW compound was reactivated, while the remainder of the lager was used as a military training facility.[201] By the latter stages of the war, there were two POW compounds at *Hammelburg Lager*; the first was for enlisted prisoners, the second was for *Offizier Kriegsgefangener* (Officer POWs). *Offizierlager* XIIIB had a water tower at one end, was surrounded by a barbed wire perimeter, and had twelve guard towers, each of which contained a machine gun. *Frankfurt am Main*, the nearest major city, is approximately fifty-five miles to the west of Hammelburg.

When Task Force Baum was launched, the allied lines were some sixty miles to the southwest of the prisoner camp which held "almost 5000 men...among them about 1500 Americans."[202] About 3000 of those prisoners, Serbian officers of the Royal Yugoslav Army, had been detained since the campaign of 1941. The majority of the remainder of

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[201]The area around *Hammelburg Lager* was used to train the German army in both armor and anti-armor tactics. The areas in which Baum's task force engaged the Germans around Hammelburg were the same areas in which the Germans had trained. Additionally, many of the commanders Baum faced were the officers in charge of the training areas and many of the troops engaged against Baum had been training in the area immediately prior to the engagement. The result was that Baum faced an enemy that not only was familiar with the area but had also been practicing the very engagements that they carried out against Baum.

[202]Martin Blumenson, *The Patton Papers 1940-1945*, v. II, (Boston: Houghton Mifflin Company, 1974), p. 670.

those incarcerated in *Oflag* XIIIB were Americans; 800 had arrived in January 1945, after their capture in the Battle of the Bulge, and another 430 that had been transferred from a camp in Szubin, Poland on 08 March. Among the latter group was the senior American in the camp; a sickly, middle aged former West Point instructor named Paul "Pop" Goode. Despite his physical condition, when Colonel Goode "shambled into camp, carrying his cherished bagpipes, there was such a defiant look on his worn face that the Bulge prisoners felt a quick surge of pride."[203] Colonel Goode's second in command was Lieutenant Colonel John Knight Waters,[204] General Patton's son-in-law.[205] Together Colonels Goode and Waters brought a measure of order and discipline to the ranks of the prisoners and established an effective rapport with the camp commander *Generalleutnant* (Major General) Günther von Goeckel. By the time Task Force Baum was sent to liberate the camp, the treatment of the

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[203]Toland, p. 286.

[204]LtCol. Waters had been captured in Tunisia in February 1943, transported to Italy and eventually moved to Poland. Early in 1945, he was known to be in a camp near Szubin. (Blumenson, II, 664)

[205]Patton actually learned of LtCol. Waters transfer to XIIIB from General Eisenhower. Information of the transfer had been wired to General Eisenhower by Major General John Deane, the head of the U. S. Military Mission in Moscow. General Deane's first indication that Waters was moving west came from the Russian commander whose troops overran Szubin.. "The Russian commander had been alerted to Waters' confinement, and he notified higher headquarters that the prisoners were gone."(Blumenson, II, 664) Deane's indications were confirmed when, he interviewed three American officers who had escaped and made their way across Poland and western Russia into allied territory. General Deane sent a telegram to General Eisenhower concerning the developments on 09 February.

prisoners had improved, but the lack of available resources meant that the prisoners' physical condition continued to be poor.

There remains some question as to whether or not the mission to liberate *Oflag* XIIIB, as originally intended, was directly linked to the highest military or political goals. "Allied intelligence had established that Hammelburg was a principal camp for captured Allied officers, that it held about 4700 inmates, among them some 1500 Americans, and that many of those at Szubin had been transferred to Hammelburg. Thus, there was a good chance that Waters was there, but no certainty."[206] General Patton knew that the Germans could move the POWs again as the Allied forces approached. He also knew that there was a distinct possibility that the POWs could be executed as the German military situation became critical. There is little doubt that both of these considerations weighed on Patton's decision to "send an expedition to the east about 60 miles for the purpose of recapturing some 900 American prisoners alleged to be in a stockade there."[207] There have been other speculations about why Patton decided to conduct the raid,[208] but Patton stated that "there were two purposes in this expedition: first, to impress the Germans with the idea that we were moving due east, whereas we intended to move due north, and second, to release some

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[206]Blumenson, II, p. 664.

[207]*Ibid.*, p. 665.

[208]One of the other postulations is that Patton conducted the raid in an attempt to make MacArthur's raid on Cabanatuan the month before look like "peanuts."(Toland, 285)

nine hundred American prisoners of war who were at Hammelburg."[209] Regardless of Patton's true motivations, the mission had significant impact on the German forces in the area.

C. TASK FORCE BAUM

The officer assigned to lead the task force sent to free the prisoners was Captain Abraham Baum, the intelligence officer for the 10th Armored Infantry Battalion. Abraham Baum was born in the Bronx on 29 March 1921, the son of a Russian-Jewish immigrant father and American born mother. The day after Pearl Harbor was bombed, Baum enlisted in the army at 39 Whitehall Street in downtown Manhattan. Following OCS, Baum was commissioned a Second Lieutenant in the Armored Infantry and assigned to the 10th Armored Infantry Battalion, 4th Armored Infantry Division, with whom he landed on the beaches of France on D-Day plus 36. During his time in Europe, Captain Baum had proven to be a tenacious fighter who could be counted on to push his men to the utmost of their abilities and get the tough jobs done. When he was assigned the Hammelburg mission, Captain Baum was directed to assemble the men that would accompany him and be prepared to depart by nightfall. He received his orders from the commander of Combat Command B, Colonel Creighton Abrams, shortly after noon on 26 March 1945. Colonel Abrams also told

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[209]George S. Patton, Jr. *War as I Knew It*, annotated by Colonel Paul D. Harkins, (Boston: Houghton Mifflin Company, 1947), p. 275. Though statements to this effect were made to the press at later times, there is no indication of this consideration in Patton's diaries.

Baum that Major Alexander Stiller, one of Patton's aides,[210] would accompany him on the mission. By 1900, Baum had gathered his task force and was prepared to move out.

When it entered enemy territory, Task Force Baum consisted of "fifty-three vehicles carrying 294"[211] battle-tested men. The task force was made up of "ten Shermans and six light tanks, three 105-mm assault guns, twenty-seven half-tracks to haul back the prisoners, seven jeeps and a medic weasel."[212] The ten Sherman tanks comprised C Company/37th Tank Battalion, under the command of Second Lieutenant William J. Nutto. Each of the Shermans was manned by a crew of five, consisting of a driver, an assistant driver, a gunner, a loader, and a machine gunner. The Shermans were armed with a 75mm main gun, one turret mounted .50 caliber (M2) machine gun, and two air cooled .30mm machine guns mounted forward. The platoon of M3 light tanks came from D Company/37th Tank Battalion and was commanded by Second Lieutenant William Weaver. The lightly armored M3 weighed only 15 tons, carried a 37mm main gun, three air cooled .30mm machine guns,

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[210]Al Stiller had been a sergeant on Patton's staff in World War I and was one of his most trusted emissaries. Stiller was a former Texas Ranger and was no stranger to combat. Though Captain Baum was never aware, Major Stiller's real reason for accompanying him was to ensure that John Waters was among the group of prisoners that returned to friendly lines. For additional information on Alexander Stiller see Richard Baron, *et al., Raid! The Untold Story of Patton's Secret Mission*, (New York: G. P. Putnam's Sons, 1981), Martin Blumenson, *The Patton Papers, 1940-1945* (Boston: Houghton Mifflin Company, 1974), and Ladislas Farago, *Patton: Ordeal and Triumph*, (New York: Ivan Obelnsky, 1964).

[211]Baron, p. 30.

[212]Toland, p. 288.

and was much more maneuverable than the Shermans. The M3 was manned by a crew of four (driver, assistant driver, gunner, and loader). The three self-propelled 105mm guns, under the command of Technical Sergeant Charles O. Graham, were essentially Sherman tanks adapted to carry the 105mm. The twenty-seven half tracks, as well as the infantry they carried, under Captain Robert Lange, were the entirety of A Company/10th Armored Infantry Battalion. The headquarters element of the task force consisted of a nine-man reconnaissance platoon mounted in three jeeps commanded by Second Lieutenant Norman Hoffman, a medical detachment mounted in the "weasel," as well as a mechanic, Major Stiller and Captain Baum in jeeps.

Baum's force was not strong enough to withstand direct confrontation with the enemy. To make matters worse, the limited preparation time and lack of high level support meant that Captain Baum had very sketchy knowledge of the location and disposition of enemy forces or the critical terrain in the area in which he would be operating. Baum's only hope was to cause enough confusion among the enemy to allow his small but mobile force to reach its objective before it could be isolated.

The plan to put task force Baum through the initial German defenses was simple. Combat Command B would cross a railroad bridge and take Schweinheim, the small town on the other side of the Main River, penetrating the first line of German defenses. While this was underway, Baum's force would punch through the chaos and head for Hammelburg. If all went according to plan, task force Baum would reach Hammelburg and XIIIB by early morning, liberate the prisoners by afternoon, and return to the advancing allied line by that

night. The first elements of Combat Command B crossed the rail bridge at 2100, 26 March and, though intelligence reports had predicted only limited resistance, ran into heavy opposition. Before the German defenses were penetrated, General Abrams was forced to engage the entirety of Combat Command B. Task force Baum crossed the River Main at midnight, several hours behind schedule, and headed east toward Hammelburg at best speed.

1. The Approach

As the task force sped through the villages of Schweinheim, Haibach-Grünmorsbach, Bessenbach, and Keilberg, they met no resistance, but machine gunned buildings and tossed grenades through open doorways to suppress possible sniper fire. Baum also directed one of the half-tracks, which were at the rear of the column to stop outside each of the towns and cut the telephone lines to prevent word of their movements from being sent ahead. As Baum observed his mile-long column from his jeep, two problems dominated his thoughts. The first was that the departure of his force had been delayed for more than three hours, eliminating any chance that he would reach his objective before dawn as he planned. At this point, the best he could hope for was a mid-morning arrival. Even a mid-morning arrival depended on his second, and more immediate concern, finding the east-west highway that connected Aschaffenburg and Gemünden. By following the traffic signs in the small towns, Baum found the east-west highway (Hwy 26) with little difficulty. Task force Baum had arrived at their first objective. The time was 0230.

Just after 0100 27 March, the Berlin headquarters of the German Seventh Army received word of the allied push across the Main and that a small force had broken off and

was heading east. The German staff thought this small force was the vanguard of Patton's Third Army. Consequently, warnings were sent to the towns in along the projected route to block the force. Additionally, "DEP13AC was asked to concentrate all available forces to annihilate the enemy task force which had broken through."[213]

Baum's force was moving so quickly that no organized attempts were successful in slowing his advance during the night. As the task force progressed through each of the blacked out towns, the small arms and bazooka fire increased. Just before dawn, as Task Force Baum approached a town called Laufach, it passed a German garrison conducting morning calisthenics. The lead tanks machine gunned the troops as they passed. Baum realized that his force was going to encounter much more organized resistance than anticipated, because they still had so much distance to cover in the daylight. As the force continued east on highway 26, they encountered another detachment of German soldiers marching along the highway. Upon seeing the Americans, the troops immediately surrendered. Baum destroyed their weapons and told them to continue marching west until they met up with the main body of the advancing American force. Prior to approaching the larger town of Lohr, Baum placed the Sherman tanks at the head of the column. Just outside the town, the lead Sherman came to a halt when the driver saw a German roadblock that consisted of an overturned heavy truck with telephone poles piled in front. Seconds after it stopped, the lead tank was struck with a *Panzerfaust*. The survivors of the crew evacuated

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[213]Baron, p. 113.

the burning tank and headed for the rear of the column. The second tank in the column did not stop; it opened fire on the roadblock, scattered the defenders and pushed the roadblock aside. The column moved through, strafing the disoriented Germans as they passed. Moments later, the column encountered a German truck convoy led by two tanks hauling 88mm flak guns. As the two columns met, the Shermans opened fire destroying the tanks, the trucks and the weapons they carried. As the column passed the wreckage, gunners strafing those Germans that had not been able to escape the trucks, 2nd Lt Weaver noticed that the soldiers were actually young girls the Germans used to man their flak guns when no men were available. The time was 0900.

Unbeknownst to Baum, Lohr was the "command post of General Hans von Obstfelder, who was the commander, or *Befehlshaber*, of all ground forces in southern Germany."[214] When Obstfelder saw that the American task force was skirting Lohr and heading toward Gemünden, he ordered a squadron of reconnaissance planes to monitor the Americans, and report their status and composition. Additionally, he contacted the garrison commander at Gemünden and told him to prepare to defend the town, to mine the approaches to the bridge over the Saale River, and to plant demolition charges on the bridge.

Highway 26, between Lohr and Neuendorf, parallels a railway. As Baum's column continued east, the light tanks again in the lead, overtook a train filled with troops and small anti-aircraft guns. Luckily, just as the column came within range of the rail mounted guns,

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[214]*Ibid.*, p. 121-2.

the road dipped below the level of the track such that the flak guns in the train could not depress low enough to fire on the tanks. Consequently, William Weaver's light tanks were able to direct fire on the train without difficulty. The first two rounds ruptured the boiler of the locomotive. Next, incendiary rounds were fired into a boxcar carrying ammunition. As soon as the train had been dispensed with, the lead tanks saw another approaching from the opposite direction. The lead tank fired two rounds at the approaching locomotive. The first round had no visible effect. The second hit the undercarriage of the engine. The locomotive "burrowed into the roadbed, the cars piling up behind it."[215]

As Highway 26 nears Gemünden, it parallels a portion of the Main River. When the column was moving along this portion of the road, Weaver spotted a river tug with five barges in tow, waiting for a lock to open. Weaver ordered his platoon to fire on the barges and tug using high explosive rounds. The barges exploded and the tug was destroyed, effectively blocking traffic through that portion of the river. On the outskirts of the town, Baum found a large railroad center and directed his column to direct fire on the tracks and then on the trains in the yard. By the time the column passed, Baum recorded that they had destroyed two trains, three locomotives, and damaged the tracks such that at least eight more trains were stranded. At this point, Baum radioed his first message to headquarters, reporting their status and requesting an air strike on the town of Gemünden. Baum's transmission was

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[215]*Ibid.*, p. 124.

relayed and confirmed by one of the Piper Cubs employed as spotters by Combat Command B.

Baum approached Gemünden with a sense of foreboding. He knew that the enemy was aware of his approach and that he should avoid the town altogether. However, the bridge to the highway leading to Hammelburg lay in the town. On the edge of town, Baum halted the column and sent his reconnaissance platoon to determine the status of the town's defenses and, most importantly, to determine whether or not the bridge was intact. 2nd Lt Hoffner's nine-man unit, in their three jeeps, were not surprised to find the streets of the town deserted as the civilians had most certainly heard the action at the rail yard. However, he was alarmed at the fact that there appeared to be no German troops in the town. The recon platoon made its way cautiously through the center of the town and finally saw the critical bridge. The stone bridge had four spans supported by five piers. The jeeps halted abruptly as they neared it. At the approach to the bridge there were dozens of anti-personnel and anti-vehicle mines that the Germans had begun to bury before the task force approached. At the far end of the bridge, German troops were visible in two three-story houses on either side of the road.

Hoffner paused for a moment, then began throwing smoke grenades onto the bridge. He then directed his driver to maintain a smoke curtain on the bridge, while he and two other men removed the mines and threw them, one by one, away from the approach to the bridge. As Hoffner and his men were clearing the mines, the Germans were sweeping the area with machine gun fire. When the last of the mines were cleared, Hoffner raced back to Baum and

reported what he had seen. Baum knew that he had been directed to avoid contact with the enemy. He also knew that this was the most direct route to Hammelburg. If he were going to get to the camp and liberate the POWs, he had to get across that bridge. Baum ordered the Shermans to the head of the column and directed one platoon of the infantry, which had been riding in the half-tracks, to move along with the tanks as they passed through the town. Consequently, the tanks had to move slowly enough so that the infantry could keep pace. As the force moved into the town, Baum again radioed the spotter plane and requested air support. When the lead tank turned onto the street that led to the bridge it was hit with two *Panzerfaust* rounds. The crew evacuated and left the tank in the middle of the road. 2nd Lt Nutto, who was in the second tank, jumped out, stopped the driver of the damaged tank as he was heading toward the rear of the column, and ordered him to get back in the tank and move it off the road. Just as Nutto got to the man, Baum arrived on the scene. At that instant, both Baum and Nutto heard a third *Panzerfaust* fire and turned just in time to see the projectile coming straight at them. The round hit the street a few feet in front of the two men and peppered them both with shrapnel. Baum was hit in the hand, arm and leg, while Nutto's entire upper body had been peppered. Baum struggled to his feet to see that the infantry platoon leader, Elmer Sutton, had made it to the other side of the bridge and two more troops were running across to join him. Suddenly, the Germans detonated the charges they had planted under bridge. The bridge and those unlucky soldiers that were on it, disappeared into a cloud of dust. Baum ordered a retreat.

When the force was out of immediate danger, Baum directed the lead tanks to follow an alternate route. They would parallel the Sinn River until they found a bridge. Shortly, the force came to a fork in the road. Baum sent the lead tank to the next ridge to see which route would be preferable. The tank reached the ridge and saw that the route it had taken petered out a short distance ahead. The tank threw a track as it was turning around. The crew destroyed the tank by dropping thermite grenades inside the tank and down the barrel of the main gun, and then rejoined the column. While this was taking place, the medic told Baum that there were four men who could not continue to travel. Baum directed the medic to "put them on the road... stick a rifle in the ground and a white bandage on it. The Germans will pick 'em up."[216]

While Baum's column searched for an alternate bridge, a German force from Gemünden raced ahead of them in an attempt to bring the force under fire again. Along the way, Baum's column captured a German paratrooper on a motorcycle headed in the opposite direction. Baum directed his interpreter, one of the members of the reconnaissance platoon, PFC Solotoff, to find out what the German sergeant knew. Solotoff questioned the man and told Baum that the man claimed to be on leave from the Russian front and was on his way to get married. After further questioning, Baum learned that the man was a deserter and was from Hammelburg. Baum had just recruited a guide. The guide told Baum that there was a bridge at Burgsinn.

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[216]*Ibid.*, p. 133.

The German sergeant stopped the column three times as it moved toward Burgsinn. Each time, he ran ahead of the column and yelled to the German troops camouflaged along the road that the war was over and that they must surrender because the American tanks were coming. Just after the last group, who abandoned two camouflaged anti-tank guns surrendered, a German Staff car approached the column. When the driver of the car saw that the tanks were American, he braked and tried to turn around, but stalled the car. Solotoff and the German paratrooper, who were now riding on the lead tank, jumped off and ran to the car while the two lead tanks leveled their machine guns on the car. As the Germans got out of the car and surrendered, it became apparent that one of them was a general officer. When General Oriel Lotz approached, Baum directed his men to tie him on the hood of one of the half-tracks in hopes that his presence would stop other Germans from shooting at the convoy. The bridge at Burgsinn was intact and the force crossed without incident.

The Burgsinn bridge was about twelve miles northwest of Hammelburg; with luck the force could reach the town in an hour. But by this point, Baum was sure that the Germans had figured out where he was headed and would have defenses prepared. Just outside Gräfendorf, Baum encountered yet another Group of Germans who threw up their hands as the column approached. This group was a work detail made up of 700 Russian

POWs.[217] Baum turned over the German prisoners, which numbered around 200,[218] to the liberated Russians and continued toward his objective.

In the period after the task force had passed Lohr, *Befehlshaber* Obstfelder had been compiling information on them. His latest report had come from General Lotz, who had regained control of the Russian prisoners shortly after the Americans had turned him over to them. Through his contact with Lotz, Obstfelder learned that the task force was not headed to the "industrial center at Schweinfurt or Würzburg, but to Hammelburg."[219] Obstfelder began to alert the commanders around Hammelburg. He first contacted General von Goeckel, the commandant of *Oflag* XIII, and *Oberst* (Colonel) Cord von Hobe who was the Hammelburg area commander. Next, Obstfelder contacted General Bernhard Weisenberger, whose forces were to the east of Hammelburg and requested that he dispatch any available units to defend the town. Obstfelder issued these communications shortly after noon on the 27th.

After Baum's column left Gräfendorf, they were forced to use small country roads to move south in the general direction of Hammelburg. In this area, the paratrooper who had been serving Baum so faithfully became lost. It was noon, and Baum was becoming desperate. If he hoped to find *Oflag* XIIIB before dark, he had to find the way to

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[217]Blumenson, II, p. 669.

[218]*Ibid.*, p. 670.

[219]Baron, p. 142.

Hammelburg soon. Baum grabbed an old farmer that was near the road in an attempt to alleviate the problem. The petrified old man had no idea how to get to Hammelburg. The farmer, whose name was Anton Birsch, suggested that Baum send his interpreter into a nearby village called Weikersgrüben. Baum complied and sent Solotoff to the village. Solotoff returned with a man named Bernhard Guertzenberger who, after some pointed persuasion, agreed to show Baum the way to Hammelburg. Once Guertzenberger had gotten the task force onto the main road to Hammelburg, Baum released him so that he could go to his wife who was in labor.[220]

Another German officer that had received word of the approaching American column was *Hauptmann* Richard Koehl, who commanded a company of *Panzerjäger*. Koehl and his company had recently been sent from the Russian front to help defend against the allied advance and were in Schweinfurt being resupplied on 27 March. At midday, Koehl loaded his eight *Panzerjäger* onto a train for the twenty mile trip to Hammelburg.[221] Roughly an hour after Koehl arrived at Hammelburg, he received word that the target of the American

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[220]Bernhard Guertzenberger returned home to his wife and stayed with her until she gave birth. Afterwards, he told her that he had assisted the Americans and left her to go into hiding. He returned home after the town was liberated by the Americans ten days later. Guertzenberger and his family currently operate a hunting lodge near Hammelburg.

[221]Though the trip to Hammelburg was only twenty miles, trains could move significantly faster than the self-propelled guns (88mm anti-tank guns mounted on Panther tank chassis, commonly called 'Ferdinands', the guns were accurate to about 1,500 yards but only had a 30° traverse). Additionally, rail transfer would allow Koehl's company to arrive at Hammelburg with full fuel tanks. Before he left, Koehl arranged for a small truck convoy to be sent to Hammelburg with fuel and ammunition to resupply his company.

tank column was likely going to be the prisoner camp to the south of the town. Koehl studied his maps and determined that the most likely route for the Americans would be Highway 27, which passed within one thousand yards of the train station and was readily visible from that position.

The first encounter between Baum's column and Koehl's Ferdinands occurred as the task force approached an intersection on Highway 27 at which Baum had decided to turn. However, the column was moving at top speed when the German guns began to fire and the first salvo had no effect on the column. After the first salvo, Baum's tanks returned fire and destroyed two of the German guns. Koehl temporarily broke off the attack. As the column made the turn, Baum directed Technical Sergeant Graham to position his 105's so that he could engage the German guns if they presented themselves again. The Germans engaged the column as it headed up the hill following the turn. This time, the first salvo knocked out the lead Sherman. The second salvo took out another. Graham picked up the position of the muzzle flashes near the railroad station and began to direct his fire toward them. By this time, the Ferdinands had disabled another Sherman and several half-tracks as they moved slowly up the hill. Shortly thereafter Graham's fire began to suppress the German guns. While his guns were firing on the Ferdinands, Graham spotted a convoy of six trucks, closely bunched, heading toward the position of the German guns. Graham shifted the fire of one of his guns to the convoy. After a few bracketing rounds, the 105 hit the lead truck which exploded and initiated a chain of explosions in the other five trucks.

When Koehl saw the American column turn south, he knew they were headed for *Oflag* XIIIB and decided to follow them via a parallel road that ran through a nearby valley. At the top of the dreadful hill, Baum finally saw, about a mile ahead of him, the POW camp he had come to liberate. Baum also noted that the camp was not heavily defended.

2. The Assault

When the column approached a grassy meadow outside the camp, Baum signalled a halt and, while the now non-mechanized infantry caught up, directed his two remaining armor officers to set their tanks in desert formation[222] across the edge of the meadow with an interval of fifty to one hundred feet. When the tanks were formed and the infantry assembled, Baum directed the infantry officers to split their units into squads and deploy them behind each of the tanks. Major Stiller took command of one of the dismounted squads.

The mechanized line moved across the meadow without incident until they were two hundred yards from the camp. At that point, the defenders of the camp, a company of combat engineers under the command of *Oberst* Hoepple,[223] hit the American line with small

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[222]Desert formation refers to the formation used by armor when they are not restricted to the use of a single road. This formation, which amounts to a line abreast, while allowing for the efficient employment of all the tanks' firepower, also served to provide cover for dismounted infantry that moved along behind the tanks until they were close enough to engage the enemy. The infantry would then fill in the gaps between the tanks.

[223]Hoepple was the commander of the *Hammelburg Lager* and was eventually given tactical command over the German efforts to stop the American task force.

arms and *Panzerfaust* fire. The tanks and 105's responded. Once the Germans had engaged, Baum's job became easier. He could now pinpoint the enemy positions. Baum saw that there was a line of infantry dug in along the edge of the camp and that the *Panzerfaust* and machine gun fire was coming from a small group of buildings off to one side. Baum directed 2nd Lt Nutto's platoon to engage the heavier weapons in the buildings and told 2nd Lt Weaver to hold his M3s in their position until Nutto reformed the line.

As the American tanks approached, the camp commandant, General von Goeckel, saw that his position was hopeless and surrendered to Colonel Goode, the senior American. After the surrender, the former prisoners decided to get word to Baum that the camp had been liberated. LtCol Waters volunteered to walk through the lines. He took *Hauptmann* Fuchs, the camp liaison officer, to act as an interpreter with the Germans along the way. Additionally, Lt Jim Mills, Lt George Meskall, and Capt Emil Stutter went along with Waters. The group carried a makeshift American flag and a white flag of surrender made of a bed sheet. As they attempted to pass through the line, a German soldier stepped out of the bushes and shot Waters. After a short confrontation, the prisoners returned to the compound.

When Nutto's platoon returned to the line, Baum saw the Germans retreating in an orderly fashion. He then saw the prisoners in the compound haul down the Nazi colors and raise a ragged American flag. Considering the probably dire results if the German troops retreated into the compound after it had been surrendered, Baum directed on of the tanks to move ahead and punch through the perimeter. When the first tank moved, the others followed its lead. The first tank broke down the fence. The second hit the same spot, then

turned and pushed along the line of the fence removing the obstacle. By 1600, the camp was secured.

In the command vehicle, Baum's radioman was directed to transmit the message "mission accomplished. Request air cover."[224] As he sent the message, the radioman could see that it was not true. The camp had been liberated, but there were five times the number of American prisoners they would have been able to carry, even if their original force had arrived intact. Additionally, they still had to return to friendly lines and the Germans were already on them. The force had reached its objective, but the toughest part of the mission lay ahead.

3. The Escape

Baum sent his reconnaissance platoon out to scout the southern route, while he attempted to organize the quagmire that had developed after the camp had been liberated. From a hill about three hundred yards to the north of the *Oflag*, *Oberst* Hoepple, the Hammelburg area commander, who had been placed in charge of the situation, watched the recon patrol move out. Hoepple, who had a land line that connected him to his command post, could now begin to counter the movements of the American task force. He decided that his first priority was to block the route Baum had used to approach the Lager. Additionally, Hoepple had word sent to the German commander in Bonnland, the next town along the

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[224]Baron, p. 175.

southern road, to prepare to defend against the American task force.[225] Next Hoepple contacted the senior officer at Höllrich, located about five miles west of the on Highway 27, to block the western route.[226] Hoepple had Koehl and his remaining Ferdinands cover the eastern approaches to the camp. By sunset, Hoepple had the American task force surrounded in a German training area.

As Baum's reconnaissance probe moved along the southern route, the column followed. Just outside Bonnland, the probe came upon a roadblock. Baum went forward and looked at the situation and decided to take a road that turned off to the right a short distance back, in hopes that it would connect to highway 27. While Nutto turned his probe around, Baum again sent the recon platoon ahead to scout the new route. Baum had no idea that Hoepple was watching his force the entire time. When the Nutto's probe reached the other road and the recon platoon returned to the main force, Hoepple had a platoon of combat engineers redeploy to hill 340, which overlooked the road. The new road was shown on Baum's map as a trail and did indeed lead to Höllrich and to Highway 27. Baum told Nutto to contact him once he had reached Highway 27. Nutto made it through the town and found the highway without further enemy contact. He then contacted Baum.

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[225]The group in Bonnland consisted of 100 officers and senior non-commissioned officers who had been undergoing training at the lager.

[226]The force at Höllrich was a company of officer candidates from Ansbach that had been at the lager undergoing anti-tank training and were very familiar with both the terrain and the type action in which they were likely to be engaged.

It was midnight and Baum was elated. He told Nutto "We're moving up. Move onto the highway in ten minutes. We should be there in twenty minutes."[227] After ten minutes, Nutto pulled out onto the highway to continue probing for the enemy. Immediately after the last tank in the platoon was on the road, Nutto saw two bright *Panzerfaust* flashes. In the light of those flashes, he also saw a German Tiger tank fire. The three rounds knocked out the first two tanks in his probe. Baum was entering the town when he heard the ambush. A few minutes later, he met the remaining vehicles from Nutto's probe. After being briefed on the situation, Baum decided to take a side road that skirted the town and intercepted the highway further to the south. Baum then ordered 2nd Lt's Hoffner and Weaver to disperse the column in a clearing that they had just passed and await further word from him. Baum took his jeep and the two remaining tanks from Nutto's probe and began to scout the route. When he had confirmed that the highway was clear through Hessdorf, Baum intended to move the column forward.

At 0230 Baum saw movement off to his right. Seconds later, a *Panzerfaust* round hit the lead tank. Baum ran off the road so the one remaining tank could turn around. He also picked up the surviving members of the tank crew. Baum then returned to the area where he had directed Weaver and Hoffner to disperse the force. Baum realized that he could not break out before daylight. He decided to move the force back to hill 427 and organize for another attempt in the morning. Most of the force, Baum included, had been

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[227]Baron, p. 199.

without sleep for over one hundred hours as they reformed the column for the trek back to hill 427. Prior to moving out, Baum called the officers together and told them that they would most certainly have to fight their way out at daybreak and that any of the POW's that did not want to go on were free to return to the camp. Colonel Goode passed the word on to the prisoners. Only twelve POWs stayed with the task force.[228] The rest of the prisoners, led by Colonel Goode, began the march back to the camp at 0500.

At 0730, 28 March, an orderly awakened *Oberst* Hoepple, who was sleeping in his command post in the lager. From his room, Hoepple could see the entire valley with his field glasses. After scanning the area, he picked up the phone and contacted Koehl, who had been directed to reposition his *Panzerjäger* during the night. He told Koehl that there were American tanks in the Reussenberg and that most of them were under the cover of trees. Koehl told his commander that he had already spotted some of the Americans. Hoepple ordered Koehl to be prepared to fire on the tanks when they began to move and hung up the phone.[229] Next he contacted *Hauptmann* Diefenbach, who reported that his *Panzerfaust* unit had positioned itself within fifty yards of the exhausted Americans. Hoepple told him to hold his fire until the Ferdinands initiated the engagement.

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[228]The number of POWs listed as remaining with the task force varies from one account to another. Richard Baron, who was one of the POWs that remained with Baum, states that there were twelve, but only lists the names of six.

[229]Hoepple also gave Koehl the bearing and range to the armor from his position which allowed Koehl to triangulate the position of the force and be extremely accurate with his first salvo.

At 0810, Baum gave the word to mount up. As soon as the first tank moved, the plateau erupted. Within three minutes, every vehicle in the task force had been hit. Baum realized that the force was lost and gave the word for those that were able to conduct evasion back to friendly lines. Task Force Baum was no more. Within hours, the majority of the task force, including Baum and Stiller, had been captured and were marched back to *Oflag* XIIIB. These prisoners remained at the camp until it was liberated ten days later. Some others, who managed to evade capture until the following day, were sent by train to Nuremburg and then on to a camp near Moosburg, a town about forty miles north of Munich. A few members of the task force, among them Technical Sergeant Charlie Graham, evaded capture and returned to the advancing American line.

D. ANALYSIS

1. Summary

Task Force Baum departed Allied lines with fifty-three vehicles and nearly three hundred men. It destroyed numerous German tanks and anti-tank guns, placed out of commission at least twelve German trains and a marshalling yard, blocked a river, captured over two hundred German prisoners, and liberated over five thousand Allied POWs. Ironically, the efforts of Task Force Baum also resulted in its own destruction, the death of twenty-six of its members, and the recapture of all but a handful of the liberated prisoners. The mission to free the prisoners in *Oflag* XIIIB was an utter failure. However, attempting the mission achieved the result General Patton later stated was its overall intent. Every town the task force passed through was left in a state of confusion. During the majority of the time

the force operated in German held territory, the Germans did not know where the task force was headed or its intent. Consequently, the Germans "diverted the equivalent of several divisions to guard strategic crossroads and bridges while another large force was scouring the hills."[230] "The effect of those units on the subsequent advance of the Third Army was evidenced by the fact that the 4th Armored Division didn't fire a shot for the first 90-100 miles in its subsequent attack."[231] Whether or not the implications of the Hammelburg mission were critical to the actions of the Third or Seventh Armies is not the central point of this discussion. This discussion examines why the mission to retrieve the prisoners of *Oflag* XIIIB failed and offers some insight into what actions could have prevented this failure.

2. The Role of Surprise

From the moment Combat Command B crossed the Main River and rolled into Schweinheim, the Germans knew that an Allied push was underway. However, when Task Force Baum punched through the German defenses and began its eastward trek, the small column surprised the vast German forces in the area. By moving rapidly and attempting to limit German communications along his way, Baum was able to achieve relative superiority. However, the magnitude of his advantage diminished as his task force encountered group after group of Germans. Even the surrendering German forces served to erode Baum's

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[230]Toland, p. 298.

[231]Frederick E. Oldinsky, *Armor* (July-August 1976).

advantage. By slowing the progress of the task force, the surrendering Germans allowed other German forces to effectively respond to Baum's movements.

Baum's force, through speed of movement, was able to surprise the German defenders through the town of Lohr. After the task force passed Lohr, the German commander was able to prepare defenses for the American column and, was eventually able to establish a measure of control over Baum's movements by removing the options available to him. Speed and surprise were the only elements Baum employed during the operation. Both of these elements failed when subjected to the friction provided by the German defenders.

3. The Cybernetic Approach

Baum's task force managed to operate inside the German decision loop until his destination became known to the German commander. This occurred shortly after Baum turned his German prisoners, particularly General Lotz, over to the liberated Russians. Lotz reestablished control over the disorganized mob and immediately passed word of the Americans' destination to Obstfelder. From that point forward, the German commanders had a cybernetic advantage over Captain Baum. General Lotz was the one prisoner that could have been expected to figure out the intentions of the task force. Had Baum opted to keep Lotz, he could have limited the flow of information to the German headquarters , as well as retaining what could have proven to be a useful bargaining chip later. As a direct result of Lotz' release, the Germans learned Baum's destination.

With significant certainty as to Baum's destination, Obstfelder began to marshal forces to impede Baum's progress. At this point, Obstfelder turned control of the operation

over to Hoepple, who had developed an extremely good grasp of the situation by the time Baum's column approached the *Oflag*. While Baum attempted to regain control over the chaos that followed the liberation of the camp, Hoepple was arranging his forces in such a manner as to drive Baum into a trap. By the time the sun rose the following morning, Baum's task force, wholly exhausted, was less than four miles from the camp and unaware that it was about to be decimated.

Hoepple's task of determining Baum's likely actions was not difficult. The simplicity of the task was rooted in three key factors. The first was that Baum's force would have to head back toward the American lines, because it had no means of resupply and was not strong enough to hold a position until it could be relieved.[232] Secondly, there were a limited number of routes that Baum could take back to American territory. Finally, Hoepple had sufficient forces at his disposal to block each of these routes effectively. Though Baum had no idea at the time, the fate of his force was sealed before he left the liberated camp.

Baum was at a disadvantage from the start. There are numerous reasons for this. The first is that he was directed to carry out a mission with a force that had not operated as a unit prior to embarkation on the mission. Secondly, although Baum was the intelligence officer for the 10th AIB, he had very little information concerning the enemy he would face, the area in which he would be operating, or the objective he was being sent to take. Thirdly, even if he had been given sufficient information, Baum did not have an opportunity to determine the

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[232]American forces took Hammelburg 10 days after Baum was captured.

strengths and vulnerabilities of his force or those of his enemy. A final element that limited Baum's ability to employ a cybernetic approach in the conduct of the Hammelburg mission was physical exhaustion. When Baum departed on the mission, most members of his force had been without sleep for nearly four days. By the time the task force attempted to return from the liberated camp, they had been awake for over one hundred hours. The past five days had been filled with non-stop combat operations. There is little doubt that Baum's physical condition significantly affected his ability to perceive an evaluate the indicators available to him.

4. Testable Hypotheses

Hypothesis 1: *Surprise is an important, but non-critical element in the success of special operations.*

A combination of speed and limited tactical surprise allowed Task Force Baum to pass through the first few German towns with no organized resistance. Given the disposition of the German forces in the area and the physical condition of Baum's force when the mission began, it is a credit to the Americans' that they progressed as far as they did before encountering significant opposition. However, the advantage gained by the unexpected breakout of Baum's task force was, from the German point of view, effectively countered by mid-morning on the 27th. By that point, Obstfelder had set into motion the forces that would first limit the options available to Baum and eventually obliterate his entire task force. Even though Baum's force wreaked havoc throughout the area, and the Germans had to divert significant forces to counter him, the Germans were able to stop the column before it

accomplished what it had set out to do. The fact was that the Germans had sufficient forces to stop Baum's column, despite the damage it inflicted. The advantage gained by surprise, even when bolstered by speed of movement, was not sufficient to overcome the vastly superior German forces in the area.

Hypothesis 2: *A relative advantage can be gained over the enemy, regardless of whether surprise is a factor, by employing a cybernetic approach in order to operate within the enemy's decision loop.*

At the initiation of the operation, Baum and his task force achieved relative superiority over the Germans in the area. However, the advantage decreased rapidly in the face of the frictions of war. Beyond cutting telegraph lines as the task force passed through the first few towns, Baum gave no consideration to the likely actions of his enemy or to the possibility that he could have limited their ability to effectively respond to his movements. Because of this, Task Force Baum, quite literally drove into a gauntlet designed by the German commanders in the area.

Hypothesis 3: *Through the employment of a cybernetic approach, a small force can maintain relative superiority over a stronger force for extended periods of time. In utilizing the cybernetic approach, the duration of the operation is of much less importance than the action-reaction differential between the two forces involved in a force-on-force interaction.*

Despite the fact that Task Force Baum initially gained relative superiority over the German forces through the use of speed and surprise, Baum failed to maintain the advantage, because he did not consciously attempt to operate within the German decision loop. This failure is evidenced by the fact that, after daybreak, no attempts were made to limit the ability of the Germans to respond to Baum's actions. During the first few hours of Baum's

raid, he attempted to limit the ability of the Germans to report his progress by knocking down telephone lines. Had Baum continued this practice with the other towns he passed through, particularly Lohr, he would have significantly reduced the ability of the German forces to coordinate a response to his movements. A second indication of the failure of Task Force Baum to operate within the enemy's decision loop is the fact that Baum did not plan for any single contingency prior to the failure of his original plan. There were no preplanned responses for encountering enemy forces and no alternates routes were discussed prior to departure on the mission. Additionally, no supporting arms were previously designated for the mission. Baum's plan for resupply was to find and take a German fuel depot in order to refuel his vehicles.

Baum's failure did not result from his inability to achieve relative superiority over his numerically superior enemy. He was able to do this through speed and surprise. However, the advantage he gained through the use of speed and surprise were short-lived because he failed to capitalize on the advantage he gained. By not effectively examining the respective strengths and weaknesses of both his and his adversary's forces, Baum was not able to target the vulnerable points that would have limited his enemy's ability to respond to his actions. The end result was that the physical superiority of the German forces eroded the temporal advantage Baum had gained through speed and surprise and, within a very short period, turn the tables in the engagement.

Hypothesis 4. *While the cybernetic approach has the ability to operate independent of other elements that can lead to successful operations, it can also be used in conjunction with these elements and provides a significant force multiplier in this role.*

Baum initially achieved relative superiority over the German forces through speed and surprise. However, he did very little to preserve or capitalize on the advantage once he gained it. The one clear effort Baum made to extend the effects of his relative superiority, by affecting the enemy's ability to respond to his actions was cutting the telephone lines as he passed through the first few towns. Had Baum not taken this precaution, there is a significant chance that the Germans would have been able to mount an organized defense outside Lohr. The Germans did receive some warning of the American task force's approach before they reached Lohr as evidenced by the hasty defense made as the column approached the town. However, the small force marshalled and the makeshift manner in which they were employed indicates that both the reaction time and information available to the local commanders was limited. Lohr was the command center for the entirety of southern Germany. Had there been sufficient information on the disposition of the American column provided to Obstfelder at a point when he could have established a defense, Task Force Baum's mission would likely have ended at Lohr. Instead, Baum was able to break the defenses and destroy numerous German assets before skirting the town and moving off toward his goal.

If Abraham Baum had given constant consideration to the manner in which his actions would impact on the ability of the enemy to respond, he could have used the cybernetic approach as a force multiplier to increase the magnitude and duration of the

relative advantage he achieved over the Germans early on in his mission. However, once he passed the town of Lohr, Baum took no action to impede the German understanding of his intentions or capabilities. Because of this, Task Force Baum lost the relative superiority it had achieved and, consequently failed to carry out the escape phase of their mission. Some actions Baum could have taken to impede the German's command-control efforts would include sending his reconnaissance platoon ahead of the column to take out telephone and telegraph lines before the column passed through the area, or utilizing air support to detect and engage targets that were along his path in order to prevent unnecessary delay of the task force.

Hypothesis 5. *Special operations forces have intrinsic qualities that suit them well to employ the cybernetic approach.*

The forces used to carry out the Hammelburg raid were selected only because they were available at the time. They were not volunteers; they met no special criteria; had no special training; and did not use any specialized equipment. However, as illustrated in other cases, non-specialized forces have often been able to carry out specialized missions with great verve. The most important difference in Task Force Baum's failure and the success of other forces lay in the fact that Baum's task force employed only conventional tactics in their effort to liberate the POWs in *Oflag* XIIIB. Specialized forces have some aspects that differentiate them from conventional forces and facilitate their achievement of a cybernetic approach, such as organizational structure and specialized equipment and training, which were not available to Baum and his men. Even though Baum did not have these things

available, he could still have tailored his tactics to exploit the vulnerabilities of the German forces. Instead, he approached the mission with the conventional mentality that had brought about the American advance up to that point in the war. This mentality, in a word, was attrition. Baum's approach to the mission was to go straight at the enemy until he was unable to advance any further. Then he would pull back and find an alternate route. Had Baum, or the more senior commanders that sent him on the mission, given any consideration to the disposition of the German forces, the mission could have been conducted in a manner that greatly increased the chances of its success by exploiting the enemy's vulnerabilities.

5. Model Application

The men of Task Force Baum were brave soldiers attempting to carry out a difficult mission in the only manner they knew. The actions of those men are to be applauded. However, the commanders that directed the mission do not deserve applause. If anything, the Hammelburg raid is an example of what can happen when commanders do not use a cybernetic approach in the planning and conduct of their mission. During the period prior to the execution of the raid, there is no evidence that any of the commanders involved attempted to determine exactly what the task force was facing. No consideration was given to the structure of the German organization in the region or the manner in which that organization operated. Had reconnaissance flights been conducted over the projected route while the task force was preparing to depart, Baum would have known significantly more about the concentration of forces in the area. He would also have known about the marshalling yards at Lohr and other obstacles. With this basic knowledge, Baum could have

determined that he would need to avoid certain areas in order to avoid engagement with significant German forces. Baum would have also been able to determine possible alternate routes to Hammelburg before he departed and prevented wasting valuable time after he was exposed to the enemy. There were vulnerabilities in the German forces in the region. However, the portion of that region that every German solider was most familiar with was the *Hammelburg Lager,* where they all trained in armor and anti-armor tactics.

During the execution phase of the operation, Baum engaged every German force along the way, despite being directed to avoid contact. While his aggression brought about the diversion of numerous German forces to the area, Baum eliminated any possibility that he might be able to liberate the camp and fight his way out before the Germans could mount an organized defense. Had Baum avoided contact and engaged only targets that would limit the ability of the Germans to coordinate their defense, he may have stood some chance of making it back to friendly lines before the Germans could block all his options.

One element that impacted the successful completion of the Hammelburg mission was the failure to integrate available assets into the operation. The entire mission unfolded within sixty miles of American lines, yet there was little communication, and no coordination with the main American force. An obvious result of the lack of coordination was the absence of air support for the mission. At this point in the campaign, American forces enjoyed total air superiority over the Germans, but no consideration was given to utilizing some of this air power to enhance the chances of success of Task Force Baum. One manner in which air power could have been used to limit the effectiveness of German efforts to counter Task

Force Baum would have been as a reconnaissance platform. In this role, aircraft could have ben used to scout potential routes for the task force and assist them in avoiding enemy contact. Additionally, these scout planes could have directed attack aircraft in locating and engaging German forces and, in doing so, could have diverted attention from the column and given more credence to the German predisposition to believe that this action represented the beginning of a major American push. Throughout the majority of the operation, Baum did have contact with at least one spotter aircraft and requested an airstrike on the railroad yard at Lohr. There is no indication that Baum or the other commanders considered a joint approach to the operation.

The approach used by Task Force Baum was the embodiment of the conventional mindset of the day, The planning of the operation gave no consideration to determining the critical points of German vulnerability. Nor did it consider the most effective means of utilizing the assets that were available. Predictably, the relative superiority gained at the outset of the mission was short-lived and the numerically superior German forces recovered from their initial unreadiness, turned the tables on the task force, and the mission ended in failure for the Americans.

VIII. PAITILLA AIRPORT RAID, 1989

A. BACKGROUND

In February 1988, grand juries in Miami and Tampa indicted Panamanian General Manuel Noriega on drug trafficking charges. The following year, Noriega, who had been a sometimes ally and US intelligence asset, maneuvered himself into an adversarial relationship with the United States. In May of 1989, General Noriega's puppet presidential candidate, Manuel Solis Palma, was defeated by Guillermo Endara in a general election, despite Noriega's efforts to control the election's outcome. Noriega declared that the election was invalid, and shortly thereafter, proclaimed himself the maximum ruler of Panama.[233] By December of that year, the actions of Noriega and his Panamanian Defense Force (PDF) provided what the Bush administration considered to be "an increasing pattern of hostility" that amounted to "unignorable provocation"[234] for the United States.

The provocation came to a head on December 16th, 1989, a Saturday that marked the celebration of Panama's annual Armed Forces Day. Some members of the PDF stopped four American officers at a roadblock. The Americans, who were in civilian attire, had driven into Panama City for dinner and made a wrong turn. At the roadblock, the PDF soldiers attempted to pull the Americans from their car. The driver of the car hit the gas and the PDF

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[233]Thomas Donnelly, Margaret Roth, and Caleb Baker. *Operation Just Cause: The Storming of Panama*, (New York: Lexington Books, 1991), p. 2-6.

[234]Colin Powell with Joseph E. Persico. *My American Journey*, (New York: Random House, 1995), p. 422.

soldiers opened fire. Marine Lieutenant Robert Paz was hit in the head and died shortly thereafter. The situation was amplified when the PDF took a US Navy SEAL Lieutenant named Adam Curtis and his wife, who had witnessed the shooting, into custody. The couple was transported to a nearby police station where LT Curtis was interrogated and threatened with death, while his wife was sexually assaulted by PDF soldiers. The following day, President Bush gave the order to carry out a contingency plan known as Operation Blue Spoon.

For the United States, Blue Spoon, later renamed Just Cause, was to be the "biggest military operation since the Vietnam War."[235] The overall objective of Just Cause was to "eliminate Noriega and the PDF," and was originally briefed to the President and his cabinet as follows:

> "We would use the forces in place, which we had been quietly beefing up to a current total of thirteen thousand troops. That number, however, was not enough... Army Rangers would parachute onto the main barracks at Rio Hato, west of Panama City, and take out the PDF companies used to put down the past coups... The 82nd Airborne Division would fly in from Fort Bragg and drop on objectives east of the city. More infantry from the 7th Infantry Division would be flown in from Fort Ord, California, to extend our control of the country and help restore law and order. US troops already stationed in Panama would seize the Commandancia and objectives in the city proper; and Navy SEALs would take the airfield where... Noriega kept his 'getaway' plane. Special Forces units would search for him... A Marine company in Panama was set to secure the Bridge of the Americas over the Panama Canal, and the Delta Force had the mission to rescue Kurt Muse, the CIA source held in Modelo Prison across the street from the Commandancia."[236]

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[235]Malcom McConnell, *Just Cause: The Real Story of America's High-Tech Invasion of Panama*. (New York: St. Martin's Press, 1991), p. 29.

[236]Powell, p. 424.

B. MISSION AND OBJECTIVE

Lieutenant General Carl Stiner was the Commander of the XVIII Airborne Corps and overall commander of Operation Just Cause. General Stiner relegated all special operations actions, which involved "some 4,100 US special operations personnel and 71 special operations aircraft,"[237] to the control of then Major General Wayne Downing.[238] The SEAL raid on Paitilla Airfield comprised one small part of the special operations component of Operation Just Cause. But, if Noriega was to be captured and extradited to the United States, the mission was critical.

Paitilla airport is a small civilian airport on the southern end of Panama City. The north-south oriented, 3,500 foot runway terminates within a few hundred yards of the northern shore of the Bay of Panama. The airfield is situated in a heavily populated area that is bordered to the north by a major highway, to the west by low and high-rise apartments and embassy buildings, and to the east by a school compound and slums.[239] In addition to housing Noriega's private jet, Paitilla Airfield also served as an operating base for local bush pilots and Colombian drug traffickers.[240] There are several open-air hangars along both sides

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[237]Lucien Vandenbroucke, *Perilous Options: Special Operations as an Instrument of US Foreign Policy*, (New York: Oxford University Press, 1993), p. 174.

[238]Donnelly, p. 113. Both Lieutenant General Stiner and Major General Downing later earned four stars and took command of US Special Operations Command.

[239]McConnell, p. 51, Walker, p. 147, and Nadel, p. 206.

[240]Greg Walker, *At the Hurricane's Eye: US Special Forces Operations from Vietnam to Desert Storm* (New York: Ivy Books, 1994), p. 154.

of Paitilla's lone runway as well as administrative buildings and a control tower on the eastern side. When the SEAL raid occurred, there were several aircraft parked on the ramp to the west of the runway. These aircraft appeared to belong to the legitimate local bush pilots, and were protected by security guards armed only with night sticks. The suspected cartel aircraft were in the hangars along the west side of the runway and were guarded by more heavily armed private security.[241]

The Paitilla mission, had it been conducted in isolation, was a fairly simple one. Three SEAL platoons, along with their command and air support elements, were to land at the seaward end of the airfield in rubber raiding craft known as CRRCs, move up the 3,500 foot runway and surround the hangar where Noriega's Learjet was kept. Once the hangar was surrounded, one platoon would disable the jet while another would drag aircraft onto the runway so as to make it unusable during the operation. When the Paitilla operation was planned and rehearsed, there was expected to be little opposition to the lightly armed SEAL force.

C. TASK FORCE WHITE

Task Force White, the name assigned the Naval Special Warfare element of Operation Just Cause, was commanded by Commander Naval Special Warfare Group Two (NSWG-2). There were several missions assigned TF White. Of these missions, the Paitilla

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[241]Edward Winters and Kent Paro, *The Misuse of Special Operations Forces*, (MA Thesis, Naval Postgraduate School, Monterey, California, 1994). This information was complied from interviews with LCDR Cliff Olson, who commanded Delta Platoon during the Paitilla raid, and CDR Patrick Toohey, the ground force commander for the raid.

raid was the largest. The Paitilla raid was assigned to SEAL Team Four (ST-4), who would be supported by elements of Special Boat Unit Twenty-Six (SBU-26) and Naval Special Warfare Unit Eight (NSWU-8). The SBU-26 element would tow the assault craft from Rodman Naval Station to their launch point using a MK III Patrol Boat configured with a lizard line. An afloat C^3 element would also be maintained aboard the vessel. Personnel from NSWU-8 conducted reconnaissance around the airport in cayugas (Panamanian canoes) prior to the operation.[242] Additionally, there was an Air Force Combat Control Team that accompanied the SEALs in order to provide communications with the AC-130 Gunship assigned to the raid.

D. THE RAID

1. The Approach

The elements of NSWG-2 and SEAL Teams Two and Four, who were to conduct the Paitilla raid, received a short notice alert on 17 December 1989 after President Bush gave the order to execute a modified version of Operation Blue Spoon. Within a day, Task Force White had recalled, loaded out and boarded a C-141 Starlifter for the trip from Little Creek, Virginia to Panama. Once the task force arrived at Howard Air Force Base in Panama, they were relocated to Rodman Naval Station, where an operations center had been established at the NSWU-8 compound.

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[242]Joel Nadel and J. R. Wright. *Special Men and Special Missions: Inside American Special Operations Forces 1945 to the Present*, (London: Greenhill Books, 1994), p. 206.

TF White settled into the compound and continued operational preparations until approximately 2100, 19 December when they embarked their fourteen CRRCs and rendezvoused with the MKIII patrol boat that carried the waterborne command element. After link-up, the patrol boat began the slow trek from Rodman Naval Station to the insertion point located one nautical mile seaward of the southern end of Paitilla Airport.[243] During the transit, two events occurred that affected the rest of the mission. The first came when the SEALs were spotted by a Panamanian trawler. The boat passed within fifty yards of the MKIII and its train of rubber boats and illuminated the SEALs with a floodlight. This interaction took place more than two hours before midnight and nearly three hours before the SEALs reached their objective. The second event came as the task force approached the insertion point when the command element received "confirmation from the Special Operations Task Force that H-hour had been advanced because of early contact."[244]

2. The Assault

Task Force White arrived at their insertion point at 0050, five minutes after the revised H-hour. Eventhough there was no way for the force to know whether the defenders had actually been warned of their arrival, all expectation of surprise was gone. By 0100, the original H-hour, the SEALs had reached the beach and established a perimeter . With "the crackling of automatic weapons and the hollow thump of cannon echoing from beyond the

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[243]McConnell, p. 47.

[244]*Ibid.*, p. 60.

high-rise buildings to their left"[245], Bravo and Golf platoons began moving up the west side of the runway using a leap frog technique, while Delta platoon and the command element moved up the east side. At the time the task force moved out, the CCT had been unable to establish contact with the AC-130 Spectre Gunship that was in an orbit over the airfield at an altitude of eight thousand feet.[246] Bravo and Golf platoons were tasked with securing the buildings on the west side of the runway, blocking the runway, and disabling Noriega's Learjet. Delta platoon was to secure the control tower and buildings on the east side of the runway and act as a ready reserve for the command element which maintained overall control of the mission and coordinated air support.

As Bravo and Golf platoons neared the midpoint of the runway, they reached the first of the hangars. As they approached the doorless buildings with metal roofs, they saw that there were numerous aircraft on the access ramps around the hangars and some of the SEALs began dragging them onto the runway. The Panamanian night watchmen saw the action and began shouting at the SEALs who identified themselves and ordered the watchmen to stand clear. As other members of TF White approached the hangars, they encountered another group of guards who were less cooperative and more heavily armed than the Panamanian watchmen. These men who were guarding the cartel aircraft had to be physically subdued

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[245]*Ibid.*, p. 62.

[246]8,000 feet is the altitude assigned to the AC-130 for the Paitilla mission as noted in Department of the Air Force, Headquarters Air Force Special Operations Command, AFSOC Regulation 55-130, Vol X, p. 4, 01 October 1991. Walker (p. 157) notes that the orbit altitude was 3,000 feet.

by the SEALs when they refused to cooperate. The altercation with the cartel guards bogged down the advance of the task force for several critical minutes. Additionally, the noise generated from the confrontation alerted the PDF soldiers, who quickly appeared on the balconies of nearby high-rise buildings.

Meanwhile, on the east side of the runway, the ground force commander (GFC) received word that there was a helicopter inbound and that Noriega might be onboard. Upon hearing this, the GFC ordered Delta Platoon to break off their current activity and set up a hasty ambush for the inbound aircraft. While Delta platoon was reforming, the GFC received a second transmission that there were three armored personnel carriers (APCs) on the highway to the north of the airfield that were heading their way. This information reinforced the GFC's belief that Noriega was inbound He thought that the APCs were being sent to secure the airfield for his arrival. The GFC then contacted Bravo and Golf platoons and told them to move up the runway as quickly as possible to counter the approaching APCs. As directed, the two platoons accelerated their movement up the runway toward Noriega's hangar. When Bravo and Golf reached it, the second squad of Golf Platoon (G-2) set up a firing line across from the first open bay of the hangar. Inside the hangar, the SEALs could see the Learjet, several PDF guards, a forklift and several fifty-five gallon drums. The SEALs once again became involved in a verbal standoff when the PDF guards refused to evacuate the hangar.

While this was taking place, Golf platoon's first squad (G-1) continued to move northward toward a position from which they could engage the approaching APCs. G-1

moved in an L-shaped formation with the base of the L facing north and the other leg facing west, so that they could direct maximum fire on the perceived threat axes.

While the lead element was moving into position, a round was fired. There is some dissent as to where the first shot came from. "Some say a PDF security guard opened fire on the lead element. Other accounts say one of the SEALs in the lead element saw a PDF soldier move into a covered position and level his AK-47 on the lead element. The SEAL instinctively opened fire on the PDF."[247] However the interaction was initiated, it resulted in the lead element being subjected to withering fire at a range of no more than thirty yards across the open airfield. At this range, "even rounds that were fired low found their mark as they hit the concrete and then traveled along the runway to the prone SEALs."[248] The engaged SEALs returned fire as best they could, but only one member of G-1 had escaped the onslaught. As G-2 maneuvered to suppress the fire from the hangar and attempted to move their injured platoon mates off the tarmac, many of their number were hit. The commander of Golf platoon contacted the GFC, reported his situation and requested assistance. The GFC immediately directed the remaining two platoons to maneuver and assist Golf platoon while he left one SEAL officer with the Air Force CCT who was still attempting to establish communications with the AC-130 and sprinted across the open runway toward the PDF hangar.

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[247]Winters, p. 64. The former version of the initiation of fire came from McConnell, p. 65. The latter version came from Winters' Toohey interview.

[248]*Ibid.*, p. 64.

By the time the GFC arrived, every remaining SEAL weapon was firing at the PDF defenders. The return fire ceased shortly and the GFC called a cease fire, secured the hangar, had the wounded moved to a safe position, and called for a medevac helicopter, which arrived approximately an hour later. The SEALs then secured the remainder of the runway and held it, in the face of sporadic sniper fire, until they were relieved by 250 Army Rangers at 1400, 21 December.

E. ANALYSIS

1. Summary

Operation Just Cause had been planned and rehearsed for months prior to its execution. The planners thought they had considered every possible option when they decided to assign the Paitilla raid to the SEALs. When the sun rose on 21 December 1989, Task Force White had accomplished their mission. They secured the airfield, blocked the runway and disabled Noriega's Learjet. But the price of success was much higher than expected. LT John Connors, ENC Donald McFaul, TM2 Isaac Rodriguez, and BM1 Christopher Tilghman were dead and eight other SEALs were wounded.[249]

The Paitilla Airport raid was one element of a large scale special operations effort coordinated in support of Operation Just Cause. The overall operation utilized every American asset in the theater. When considered in the grand scale, the Paitilla mission played a small, but important role. For all practical purposes, the SEALs achieved the goal

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[249]Donnelly, p. 117.

of their mission, to prevent Noriega's use of the airport or his Learjet as a means of escape, the minute they moved onto the airstrip. Utilizing the weapons they carried, the SEALs could have stopped any attempt to launch aircraft without actively engaging the guards.

While the Paitilla raid proved to be a successful special operation, in spite of lost surprise, and while it portrays a limited example of the employment of a cybernetic approach, the operation also illustrates some important limiting factors in the employment of the approach.

2. The Role of Surprise

During the planning and rehearsal phases of the Paitilla operation, surprise was considered to be a given. "The last training exercise only four days earlier...had succeeded in...under ten minutes." However, the training exercises had been "posited on the factor of complete surprise."[250] The chain of events that led up to the execution of the raid, however, destroyed all hope of achieving surprise. The first link in this chain came in the form of the massive airlift that brought the SEALs, as well as the majority of the other troops that participated in Operation Just Cause, into the area of operations. The significant increase of traffic at Howard Air Force Base, while it provided no indication as to specific targets, did provide the Panamanians with a general warning that some sort of action was taking place.

The second instance of operational disclosure came when the task force, in tow behind the MKIII patrol boat, encountered the Panamanian trawler. This encounter also

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[250]McConnell, p. 60.

provided a warning signal to the Panamanians that something was amiss. More importantly, the warning was available early enough to allow them to react. However, since the incident occurred nearly three hours before the original H-hour, there is little likelihood that it provided target specific information to the PDF. The third incident that led to the loss of surprise was the late-breaking advancement of H-hour. This change, while necessary to preserve some measure of surprise for the overall operation in Panama, was beyond the control of TF White and forced the SEALs to attack an alerted defense at their objective.

The final element in the loss of surprise took place when Bravo and Golf platoons were bogged down by the altercation with the cartel security personnel. The delay, and the noise generated during the standoff did two things. It alerted the PDF soldiers in Noriega's hangar and in the buildings surrounding the airfield to the approach of the SEALs, and it provided the defenders with sufficient time to take cover and prepare a defense. The first three links in the chain did not disclose the SEALs' target, but they did serve to heighten the level of awareness of the PDF forces in the area. The fourth incident provided the defending force with a critical advantage over the assault force.

3. The Cybernetic Approach

The various elements of Operation Just Cause were planned much earlier under the rubric of the contingency plan Blue Spoon. Targets were selected and the units that would be employed in the execution of the plan were determined months before the situation developed into a crisis. Additionally, the American forces were afforded a unique situation in that, in many cases, they were able to conduct training exercises on the actual objectives.

Even the targets that were not available for exercises could be thoroughly reconnoitered prior to the operation. The SEALs that conducted the Paitilla raid were not able to rehearse their mission on the actual airfield, but they did have ample opportunity to collect detailed intelligence on all aspects of the airfield and its operation.

Ironically, one of the most serious limitations on the SEALs' ability to employ a cybernetic approach resulted from a lack of solid intelligence regarding the strength and capabilities of the Panamanian forces at the airfield. There was no extended surveillance of the target conducted to determine the disposition, numbers, routines, or capabilities of the forces at the airfield. The only reconnaissance of the target was conducted by personnel from NSWU-8, the day before the operation took place. This reconnaissance, however, took place while Noriega's jet was elsewhere and served only to reinforce Task Force White's predispositions that the airfield would be lightly defended. Had there been an ongoing effort to gain information on the airfield defense forces, they would have seen that while Noriega's aircraft was present, security concerning the airport defenses had been significantly increased following the October coup attempt.[251] As a result of the critically limited intelligence, the members of the assault force did not even know if Noriega's jet would be at the airfield when they arrived, let alone the posture of the airport defenses.

Unlike the availability of intelligence, some of the factors that limited the utility of a cybernetic approach to the Paitilla operation were beyond the control of the SEALs. One

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[251] *Ibid.*, p. 55.

of these limitations, which is common to every modern military operation, was restrictive rules of engagement (ROE).[252] The SEALs had been directed to utilize minimum force required when dealing with the personnel at the airfield. While the reasoning for this limitation is readily obvious and does not warrant question, it hampered the ability of the operators to maintain the initiative during the raid. At several critical points in the operation, the SEALs became bogged down when they were forced first to provide verbal warnings, and then to subdue and immobilize the airport security guards. The time lost and the noise generated by these actions played a significant role in subsequent developments in the operation.

Another occurrence over which Task Force White had no control was the unplanned advancement of H-hour. Here again, the relative importance of the overall operation took precedence over the SEAL mission. When units were engaged prior to the planned execution time, the operational commanders decided to move H-hour forward fifteen minutes in order to preserve some semblance of surprise for the majority of the forces which were laying in wait for the execution signal. The SEALs however, were on a relatively fixed timeline as they languished in the wake of the patrol boat that ferried them to their insertion point. The task force did manage to make up ten minutes of their lost time, but it was not enough. By

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[252]Alexander George *Avoiding War: Problems of Crisis Management* (San Francisco: Westview Press, 1991) contains an informative essay entitled "Rules of Engagement" by Scott Sagan, p. 443-470.

the time the task force made landfall on the southern end of the airfield, the defenders had already been alerted by the actions taking place all around them.

The final limiting factor in the utility of a cybernetic approach during the Paitilla mission that was beyond the control of TF White lay in the selection of the SEALs for the mission. During the early planning phases of the contingency plan, there were three options for the assault on the airfield: and Army Ranger option, a Marine option, and the SEAL option.[253] The Ranger option was the first and theoretically, the best option as the Rangers specialize in airport seizures. However, this option proved logistically infeasible because of the number of aircraft that would be required. The possibility of a Marine amphibious assault was also considered, but discounted because it would require the presence of an Amphibious Ready Group (ARG) in the general vicinity, which would be an unmistakable indicator of an impending operation. The SEALs were the last option. They could carry out the mission with little risk of predisclosure and they required limited external support. In a situation where every asset was committed to its limits, the relatively inexpensive SEALs were the best option.

Even with the critical lack of timely intelligence and the limited operating space afforded the SEAL task force, they utilized a cybernetic approach to a limited extent in the planning of the raid. During planning and rehearsal, the SEALs capitalized on their strengths, speed and stealth, and posed them against what they perceived to be the

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[253]The advantages and disadvantages of each of the three options are discussed in detail in Winters and Paro, p. 50-55.

weaknesses of the PDF, limited force and lack of knowledge of the attack. In short, the SEALs were certain that they would surprise the defenders of the airport. Their information and assumptions both proved to be wrong. Even though they identified the likely points of vulnerability of their opponent and based their plan on these weaknesses, the SEALs failed to consider the critical contingencies. Preparation time was not a limiting factor in this operation. Had the planners of this operation given consideration to the possibility of lost surprise or a defense that was more capable than expected, they could have devised plans to counter the contingencies.

4. Testable Hypotheses

Hypothesis 1: *Surprise is an important, but non-critical element in the success of special operations.*

Task Force White was successful in their raid on Paitilla Airport and they achieved this success without the element of surprise. They were able to succeed, albeit at a high cost, because they overcame the will of the enemy to resist. The SEALs were able to direct effective fire on the defenders of Noriega's hangar until they were either unwilling or unable to continue their resistance.

Hypothesis 2: *A relative advantage can be gained over the enemy, regardless of whether surprise is a factor, by employing a cybernetic approach in order to operate within the enemy's decision loop.*

Task Force White regained relative superiority after it had been lost. They accomplished this by accurately assessing the situation, determining the critical node of the enemy force, which in this case was that node that was having the greatest effect on their

force, and effectively directing their assets to counter the threat. There were no apparent tactical command and control nodes in the PDF force at Paitilla Airfield. The fire coming form the hangar was joined haphazardly by disorganized fire from the surrounding buildings. Once the SEALs had quelled the fire from the hangar, the fire from the surrounding area faded. The commander of Task Force White regained relative superiority over the PDF forces by locating the point that would not only impede the ability of the enemy to effectively employ his forces, but would convince him that his position was untenable.

Hypothesis 3: *Through the employment of a cybernetic approach, a small force can maintain relative superiority over a stronger force for extended periods of time. In utilizing the cybernetic approach, the duration of the operation is of much less importance than the action-reaction differential between the two forces involved in a force-on-force interaction.*

The SEALs at Paitilla lost relative superiority when they were detained by the cartel guards. The advantage that the PDF had became evident in the first seconds of the interaction at the PDF hangar. However, the SEALs were able to regain relative superiority, because they reacted to the situation more quickly and more effectively than the PDF defenders. The TF commanders saw the situation that was developing and shifted the priorities of their forces in order to focus on the critical area. When Bravo and Golf platoons were detained in their movement up the runway, the Panamanians were able to evaluate the situation and react more effectively than the Americans could, and in doing so, gained a relative advantage over their adversaries. As the situation developed, however, the SEALs perceived their predicament and reacted in a manner that turned the tables, while the PDF defenders found themselves in a position where they could not effectively react to the

situation. Unlike many of the other cases examined, in which the force-on-force interaction lasted for an extended period and the small force maintained relative superiority for the majority of the operation, relative superiority changed hands twice in the Paitilla raid, while the entire force-on-force interaction took place within the span of a few minutes.

Hypothesis 4: *While the cybernetic approach has the ability to operate independent of other elements that can lead to successful operations, it can also be used in conjunction with these element and provides a significant force multiplier in this role.*

First and foremost, the limited use of a cybernetic approach in the planning and execution of this operation illustrates the fragility of the advantages gained through surprise. The operation also illustrates how the use of a cybernetic approach can amplify the effects of other elements that lead to operational success in that the SEAL force was able to regain relative superiority through employment of the approach. As noted earlier, by the time the SEALs subdued the cartel guards, they had lost any operational advantage they may have gained through stealth, speed, shock, or surprise. However, the SEALs were able to reestablish the advantage with reference to the PDF guards after the firefight commenced. The GFC was able to achieve this through accurate analysis of the threats that faced his force and effective employment of his remaining forces to counter the most critical threat. Upon hearing the first salvo of the engagement and receiving the initial reports from his platoon commanders, the GFC assessed his perception of the situation and likely determined that there were already some aircraft blocking the runway and that those elements were experiencing no resistance. Additionally, he could see that if the threat at the PDF hangar was not quelled, the entire mission could be jeopardized. With this in mind, the GFC

decided to redirect the unengaged squads to support the element that was pinned down by fire from the hangar. Shortly thereafter, the threats from the helicopter and approaching APCs proved to be unfounded when the vehicles continued past the airport and the helicopter never appeared. This freed the remaining portion of the task force to provide additional support. The supporting fire from the other SEAL elements increased the suppressive and shock effects on the PDF defenders, as well as continued to degrade their capacity through physical destruction of the force. By concentrating his forces on what proved to be both the critical point of vulnerability of his force and that of his adversary, the GFC shifted the relative balance of forces in the engagement and regained relative superiority.

Hypothesis 5: *Special operations forces have intrinsic qualities that suit them well to employ the cybernetic approach.*

Although TF White did not effectively employ a cybernetic approach throughout the entirety of the planning and execution of the Paitilla raid, they did manage to operate in this fashion at the critical point in the execution of the mission. The actions of the task force during this phase exemplify some of the intrinsic qualities that allow special operations forces to employ this approach. The first of these qualities is flexibility. TF White exhibited a high degree of flexibility throughout the operation. They were able to shift their focus to meet changing threats, such as the indication that a helicopter was inbound carrying Noriega, or that there were APCs headed for the airfield, without losing sight of the overall mission. The flexible nature of the SEAL force that allowed them to meet these various tasks resulted from the ability of the three platoons to operate independently. Because of this, the GFC was

able to split Delta platoon to cover the unanticipated threats, while Bravo and Golf platoons continued with the original mission. Another element that facilitated this flexibility was the direct communication between the GFC and the operating units. Throughout the operation, LCDR Toohey was able to maintain close control over his units because he dealt directly with them.

Another element that allowed the SEALs to interpret the changing situation and successfully adapt to it was the cross-training of the members of the force. When some members of the unit were hit, others were able to carry out the tasks of their fallen comrades. Cross-training of the members of the force was not the only element that allowed the SEALs to overcome adverse situations without waiting for orders from above. Another equally important factor, was the fact that every member of Task Force White understood the commander's intent for the mission down to the finest detail. Additionally, the fact that the members of the force had operated and trained together for an extended period of time, meant that they understood how the other members of the force were expected to act and react to a broad range of situations. This aided the members of the force in rapidly adapting to changes in the mission.

5. Model Application

Was a cybernetic approach used during the planning phase of the Paitilla Airport operation? Did the planners take into consideration the strengths and vulnerabilities of both forces involved in the interaction and devise a plan that posed the strengths of their force against the vulnerabilities? The evidence examined indicates that the planners did, in a

rudimentary fashion, utilize the approach. However, the planners, who were acting on woefully insufficient information, were not successful in effectively assessing the capabilities of the enemy force, and consequently, based their plan on faulty assumptions. Prior to the operation, the planners "noted that the operation would succeed against a small, lightly armed security detachment. But three, sixteen-man SEAL platoons, no matter how well motivated and trained, were simply not strong enough on the ground to take on a heavily defended and well-fortified position."[254] But despite this limitation, or perhaps because of it, the planners of the Paitilla operation assumed that the airfield would be lightly defended. This assumption, as well as the subsequent assumption that the task force would be able to surprise the defenders, comprised the flawed basis upon which the plan was developed. Even with these basic assumptions, the planners should have considered the possibility that they would not hold true and determine some basic contingencies to be utilized in those cases. Additionally, utilization of the cybernetic approach would have required that the planners consider how their opponent would likely react to their actions and base their actions, in part, on this consideration.

During the execution of the operation, the task force used a cybernetic approach in order to regain their superiority relative to the PDF defenders during the interaction at the hangar. However, the members of the force did not effectively employ the approach during the period of their interaction with the cartel personnel. The limitations placed on the force

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[254]McConnell, p. 58.

by the restrictive rules of engagement did not permit sufficient operating space for the SEALs to act in a manner that would bring about the proper effect on the future actions of the PDF guards. Had the SEALs been able to silence the cartel personnel quickly, in a manner that could not have been mistaken by the PDF guards, the reception the SEALs received at the PDF hangar may well have been different. The operators were, no doubt, fully aware of the effect their actions could have on the situation, but they did not consider alternative methods of dealing with the situation that could have alleviated the problem.

Following the operation, numerous debriefings were held and many lessons learned resulted. These lessons, as well as those of many other recent special operations have brought about significant changes in the planning and conduct of special operations. The transformation of the special operations operational planning process has not been limited to the planners and operators. Support elements, such as intelligence,[255] have also made significant changes in the manner in which they support the operations. These changes will facilitate more effective utilization of a cybernetic approach to special operations.

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[255]Some of the recent changes in intelligence support to this type operation are discussed in an article by Captain Terry L. Meek, USN and Lieutenant Commander Lawrence T. Peter, USN entitled "Navy Intelligence Support to Naval Special Warfare," *Naval Intelligence Professionals Quarterly*, Volume XI, Number 4, October 1994, p. 1-4.

IX. CONCLUSIONS

A. CONCLUSIONS

The idea for this study originated with William McRaven's concept of Relative Superiority.[256] McRaven indicated that the concept needed development. This work carries the concept one step further by illustrating that relative superiority results from an iterated, interaction between competing forces, one that may rely less on surprise than commonly thought. With this in mind, the study questions the robustness of the advantages gained through surprise, and even the necessity of surprise in the calculus of special operations. From these two basic threads is woven the fabric of the cybernetic approach. The cybernetic approach postulates that a small force can achieve and maintain relative superiority for extended periods, with or without the benefits of surprise, by targeting critical points of vulnerability which allow the force to operate within the enemy's decision loop and facilitates the preservation of relative advantages. The cybernetically derived advantage amounts to the relative differential in the speed and effectiveness of the implementation of commands issued by opposing commanders in a force-on-force interaction. This study argues that the concept of relative superiority and the cybernetic approach should be readily applicable to any form of iterated oppositional force interaction, but limits the scope of investigation to consideration of these ideas as they apply to the conduct of special operations.

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[256]William McRaven, *SPEC OPS Case Studies in Special Operations Warfare: Theory and Practice*, (Novato: Presidio Press, 1995).

Warfare is a deadly force-on-force interaction in which each action is based on the commander's estimate of force capabilities, the environment, and his estimate of the opposing commander's intent. Based on this central assumption, the cybernetic approach was used to explain how some special operations succeeded without surprise while others failed after achieving surprise. Additionally, the approach was structured to provide a framework to aid in the planning of future operations. As a tool for analysis and planning, the cybernetic approach does not attempt to provide a quantitative guideline. Rather, it is intended to serve as a general construct to guide and spur the thoughts of operational planners, commanders, and support personnel. The cybernetic approach is not a quantitative determinant of success because the innumerable factors that affect the operation cannot be predicted. However, the critical factors of an operation can be predicted with enough consistency to provide a significant improvement in the ability of a force to achieve and maintain relative superiority by operating within the enemy's decision loop. Further development of this concept, especially in determining means of locating and exploiting critical points of vulnerability and in predicting likely enemy actions is needed. A good starting point for this development would be with the consideration of chaos theory and the determination of the range of likely enemy actions. Another area that could be examined would be the manner in which a cybernetic approach can be applied to internal war or humanitarian or peacekeeping missions.

The case studies selected for this work, which are intended to be illustrative in nature, were conducted by several different countries, span more than two centuries, and consider

various types of operations including littoral and land based operations. Some of these operations were conducted independently while others were elements of larger coordinated operations. Selection of cases across a broad historical period illustrates the fact that the use of a cybernetic approach is not limited to a technologically advanced period, and highlights the relatively unchanging nature of close combat. The variety of operations illustrates the universal applicability of the approach. Additionally, some of the cases identify the limitations to the cybernetic approach. These limitations consisted largely of outside factors that lie beyond the control of the operators but were not beyond the realm of the operational planners. These factors include the basic paradigms under which planners and commanders operate, restrictive rules of engagement, priority of other missions during joint operations, limited availability of resources, and availability of intelligence that is timely, accurate, and relevant. Of these, the most critical are the availability of good intelligence and the self-imposed limitations of dominant paradigms.

Intelligence is the engine that drives the cybernetic approach during the planning process, because intelligence allows the planners to identify the critical points of vulnerability and facilitates the determination of the most effective means of exploitation. Operating without accurate intelligence, as in the raids on the Hammelburg POW camp and Paitilla airfield, greatly impairs the ability of a planner to employ a cybernetic approach. Restricting one's thoughts to the bounds of the dominant paradigms affects both the manner in which planners and commanders interpret available intelligence and their basic perceptions of the environment.

The hypotheses tested in the case studies were generally confirmed. The first hypothesis, that surprise is an important, but non-critical element in the calculus of special operations success, was clearly illustrated by all of the cases. None of the successful cases achieved strategic or significant tactical surprise against the foe, while the Hammelburg mission achieved both strategic and tactical surprise and still ended in failure. The second hypothesis, that through the employment of a cybernetic approach, a small force can maintain relative superiority over a stronger force for extended periods and that the duration of the operation is of less importance than the action reaction differential between the two forces, was strongly supported by the actions of Major Rogers, Lord Cochrane, and the US Navy SEALs at Paitilla Airport. The cases of Rogers and Cochrane support the hypothesis because they were extended operations in which comparatively small forces maintained relative superiority over potentially superior forces for extended periods of time. The Paitilla raid also illustrated the validity of the hypothesis but does so in an inverse manner. In this case, relative superiority changed hands twice within a few minutes. Regardless of the duration of the operations, the cybernetic approach employed by the commanders allowed them either to maintain or regain relative superiority during the critical portions of the operations.

The third hypothesis, concerning the capability of the cybernetic approach to be employed in conjunction with other elements, proved to be correct in that the cybernetic approach continued to be effective long after the advantages of the other elements diminished. However, it was also evident that the employment of the cybernetic approach

is often achieved through the use of other stratagems. The cybernetic approach allows for the effectiveness of these stratagems to be maximized by employing them in the most efficient manner. In this case, it would appear that the latter portion of the hypothesis represents a more accurate assessment of the functionality of the cybernetic approach.

The final hypothesis, concerning the universality of the approach and the intrinsic qualities of special operations forces that make them more likely to succeed in such an approach, held true throughout the cases. While all of the operations examined were not carried out by what would be considered to be special operations forces by modern standards, the forces considered fit the definition used herein in that they were special in their day. Additionally, the forces examined possessed some common traits that are indicative of modern SOF and facilitated the use of the cybernetic approach. These common qualities include less hierarchical organizational structure, shorter lines of communication, greater autonomy of the tactical commander when compared with the conventional forces, high levels of cohesion within the force, thorough understanding of the commander's intent by the operators, and the integration of support elements into the operations.

The operational model presented in this work was intended as a non-rigid tool for operation planning and post operational analysis. The tool is non-rigid in that it does not represent a fixed for success. Rather, it represents a basic framework to guide and spur the thoughts of planners and to assist commanders in developing lessons learned from past operations. The model is divided into three phases, planning and rehearsal, execution, and post-operational. The planning phase includes such actions as locating critical points of

vulnerability and determining means of exploiting these points, as well as incorporating these elements into the operational plan. Rehearsal includes refinement of the plan, consideration of foreseeable contingencies, and repetitive practice for execution. The execution of the plan is the fruit cultivated during planning and rehearsal. The post operational phase amounts to debriefing and critique of the operation and provides lessons learned for integration into follow-on operations.

B. RECOMMENDATIONS

The question remains as to how the cybernetic approach can be incorporated into the planning and conduct of special operations. In short, the framework for this incorporation is in place in the form of the training pipeline. The physical framework for integration however, is not the biggest obstacle to the effective incorporation of the tenets of a cybernetic approach into operations. The biggest obstacle is what I term paradigmatic paralysis. Paradigmatic paralysis is an unwillingness or inability to question the basic assumptions upon which we currently operate. The vehicle for this change, in the long term, lies in pipeline training and continued practice. The concept of relative superiority and the cybernetic approach must be taught at the most basic levels in order to ensure that they lie at the foundation of our understanding of the operational planning process. In the near term, the concepts need to be exposed to all levels of personnel so that they may be considered and critiqued. The concepts and the cybernetic approach, as presented herein, represent a basic foundation that needs further consideration and refinement. Exposure to personnel from

various levels of operational involvement will facilitate the breakdown of any paradigmatic paralysis and will strengthen the utility of the approach.

Even with thorough training and development, these tools will be of little use without the establishment of clear political and military objectives, and rules of engagement. These externalities can cause serious problems for any special operation, regardless of the approach used. Clear objectives will assist planners in determining which points of vulnerability and influence will contribute the most to overall mission success, while clear rules of engagement facilitates determination of the most effective means of exploitation of these points. Modern technology, particularly computers and telecommunications technology, can also play a significant role in the effective employment of the cybernetic approach. Computer modeling and simulation can be utilized to locate points of vulnerability, both the adversary's and in friendly forces. Telecommunications technology currently available can facilitate the provision of this information to remote or deployed elements and can facilitate interactive participation in the adaptation of simulations to reflect reality more accurately. Further examination of the use of information technology in employing the cybernetic approach is another area that should be considered in follow on research.

This study had illustrated the interactive, iterated nature of special operations and the benefits that can be gained through the use of a cybernetic approach in the planning and conduct of these operations. Additionally, it has indicated that the approach needs further development in order to increase the dependability of special operations. Several venues for further research have been indicated but do not represent the only areas that should be

considered. As stated at the outset of the study, any and all measures that can be employed to increase the likelihood of special operations success must be thoroughly investigated, tested, and where applicable, implemented.

APPENDIX. TABLES AND GRAPHICS

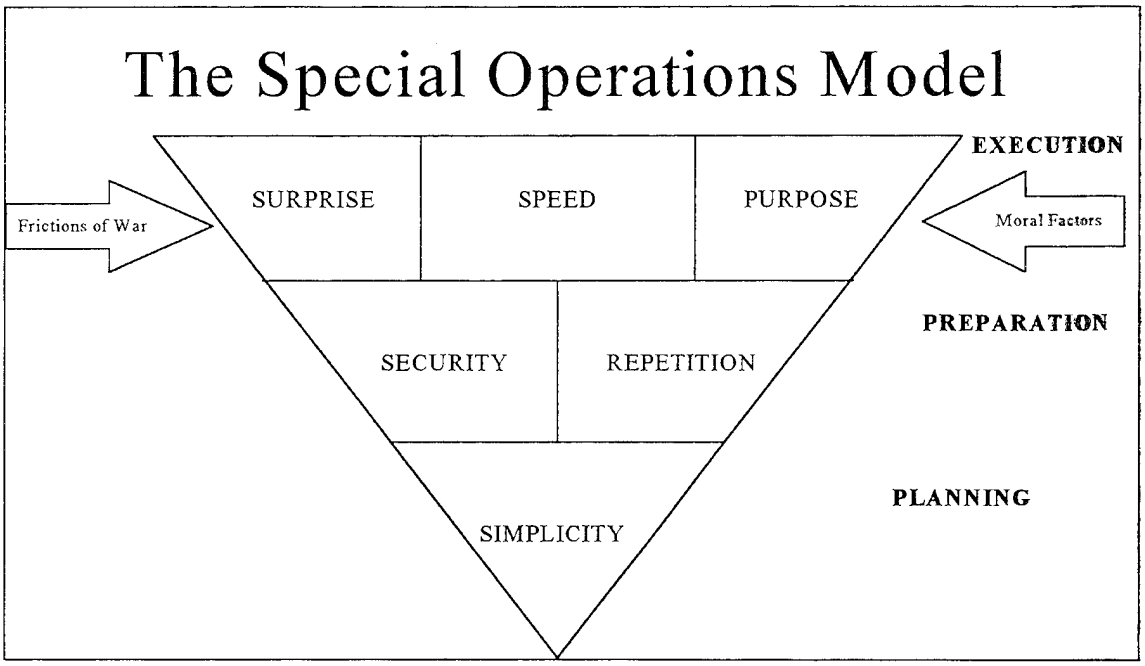

Figure 1: McRaven Special Operations Model.

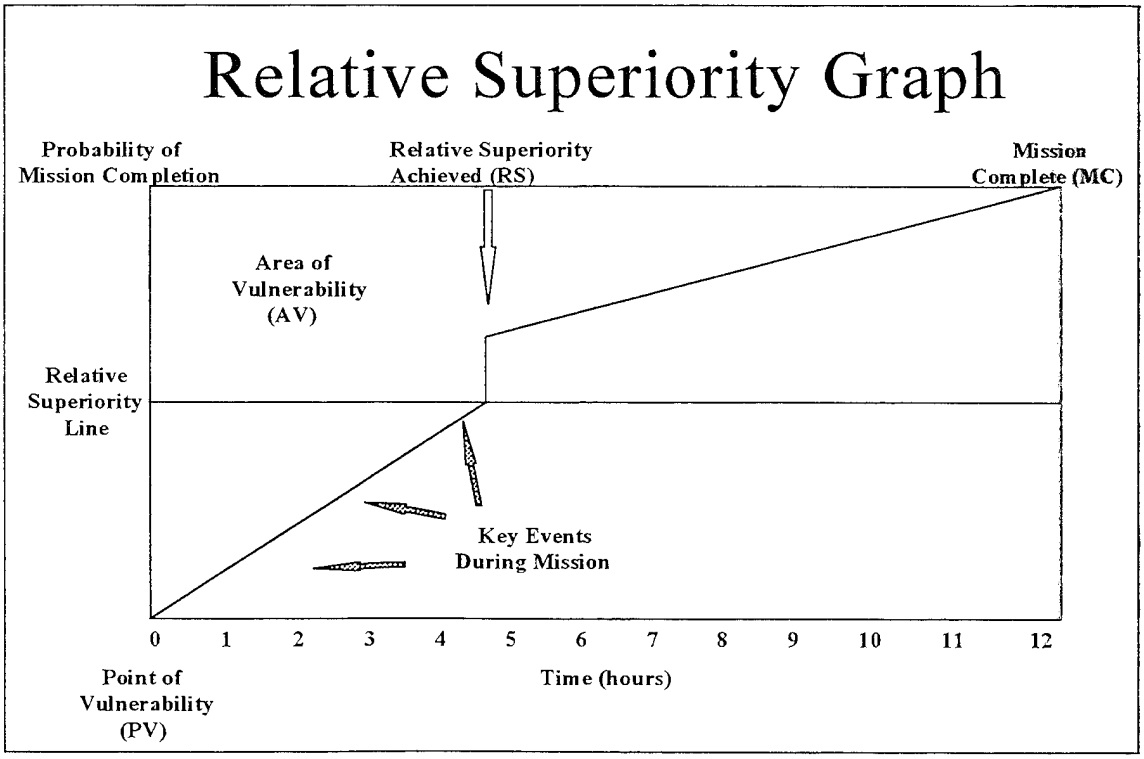

Figure 2: McRaven Relative Superiority Graph.

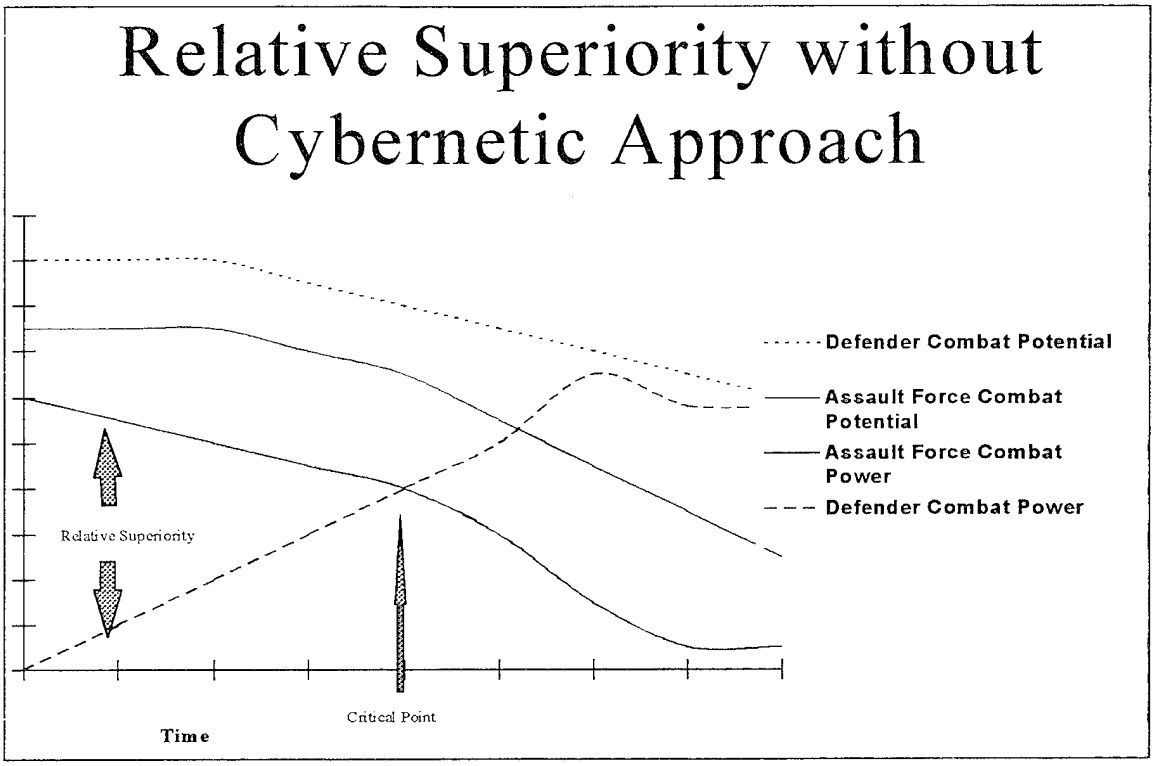

Figure 3: Interactive Relative Superiority Graph.

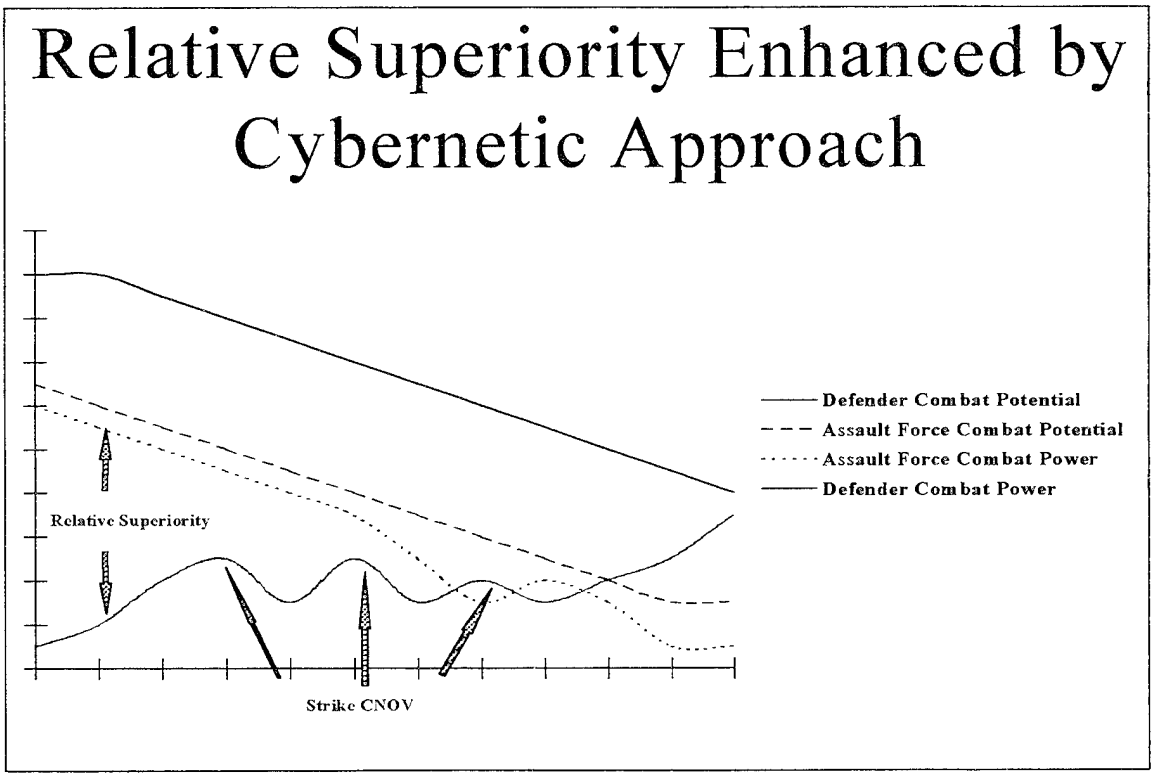

Figure 4: Interactive Relative Superiority Enhanced by Cybernetic Approach.

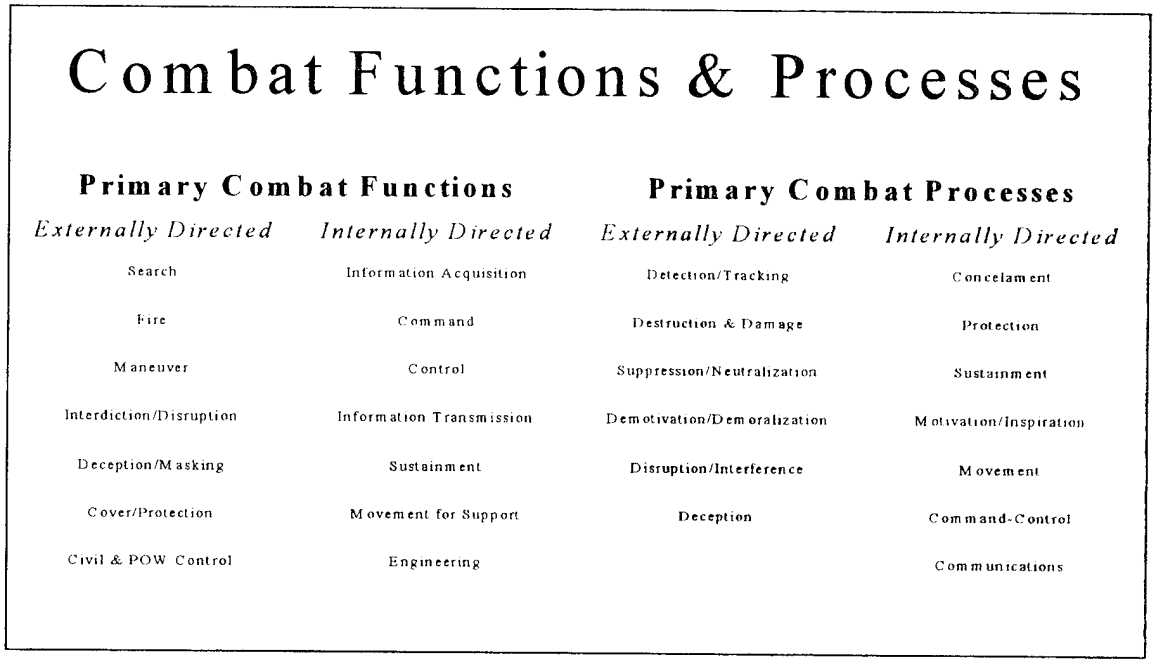

Figure 5: Combat Functions and Processes.

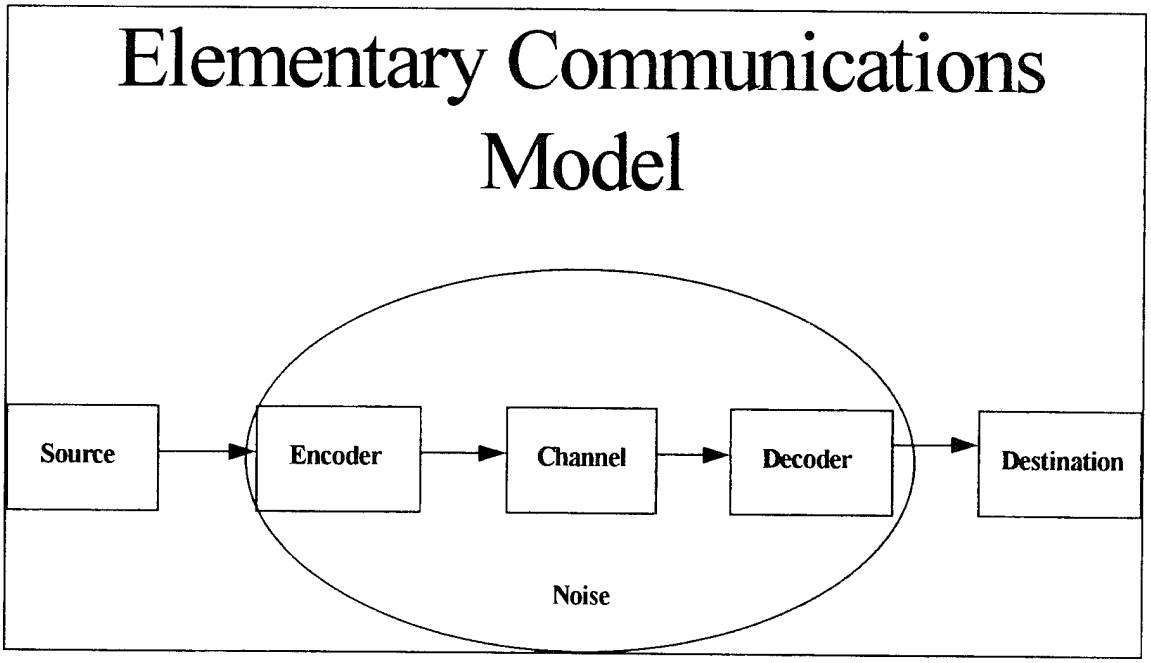

Figure 6: Elementary Communications Model.

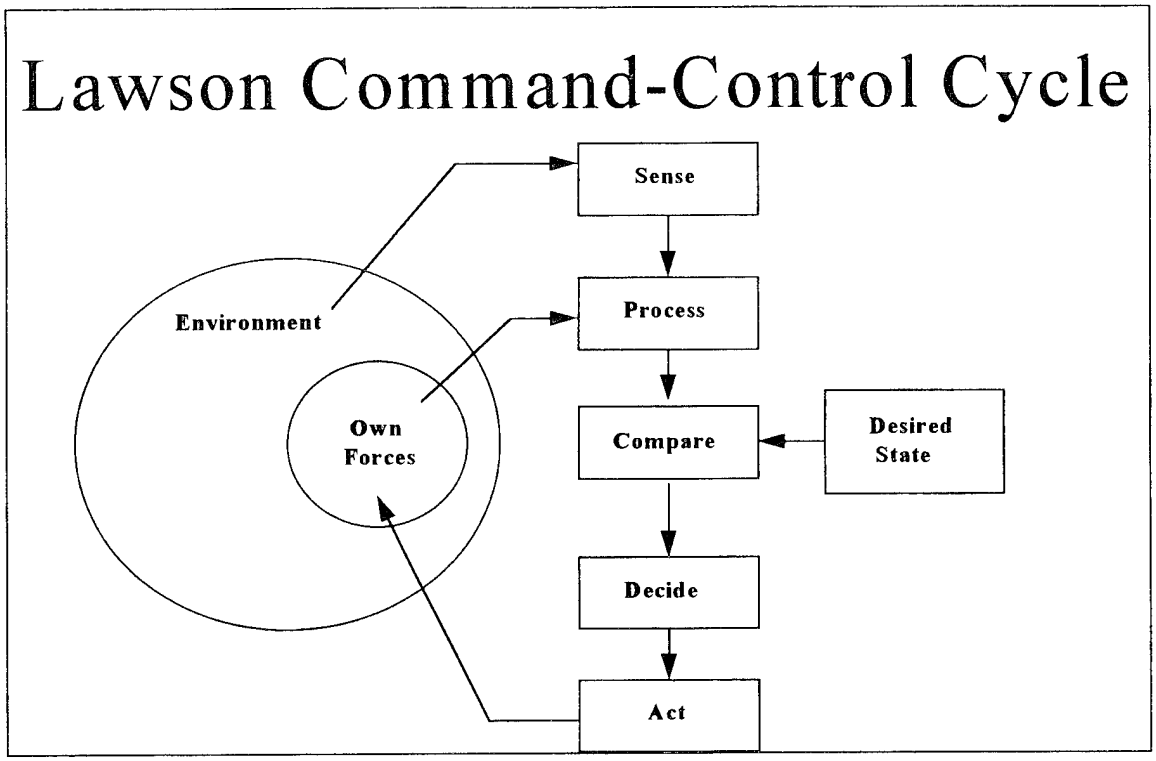

Figure 7: Single Sided Command-Control Cycle.

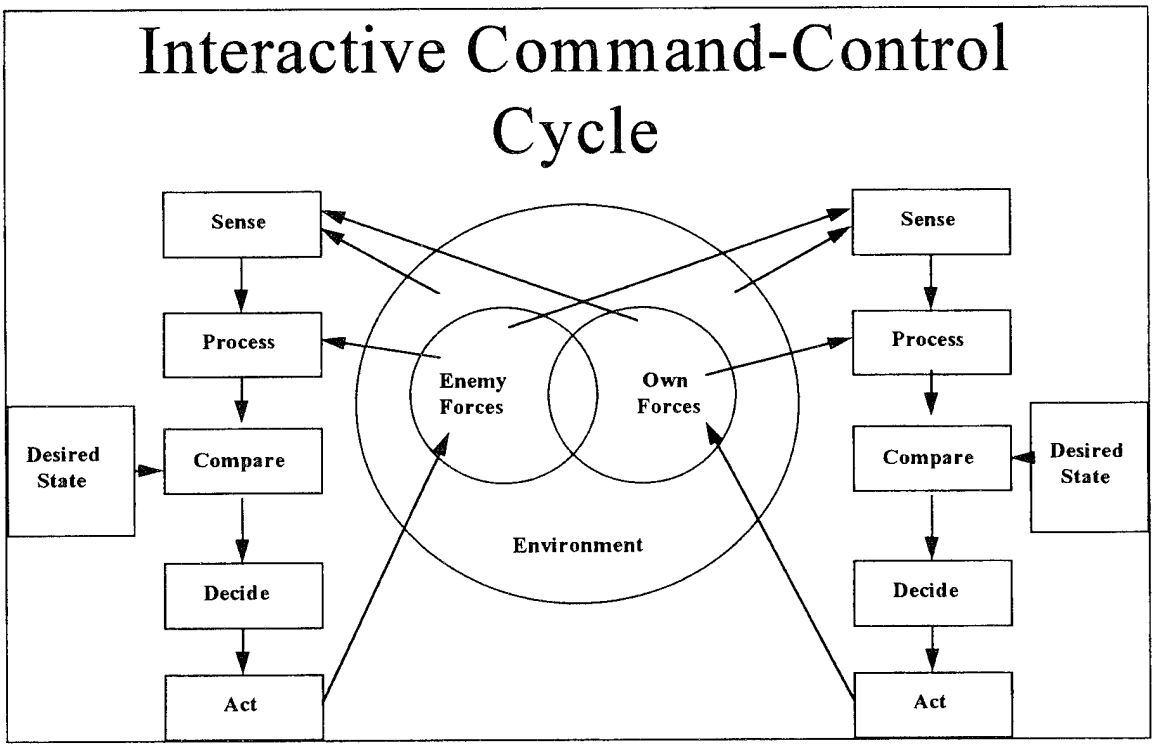

Figure 8: Interactive Command-Control Cycle.

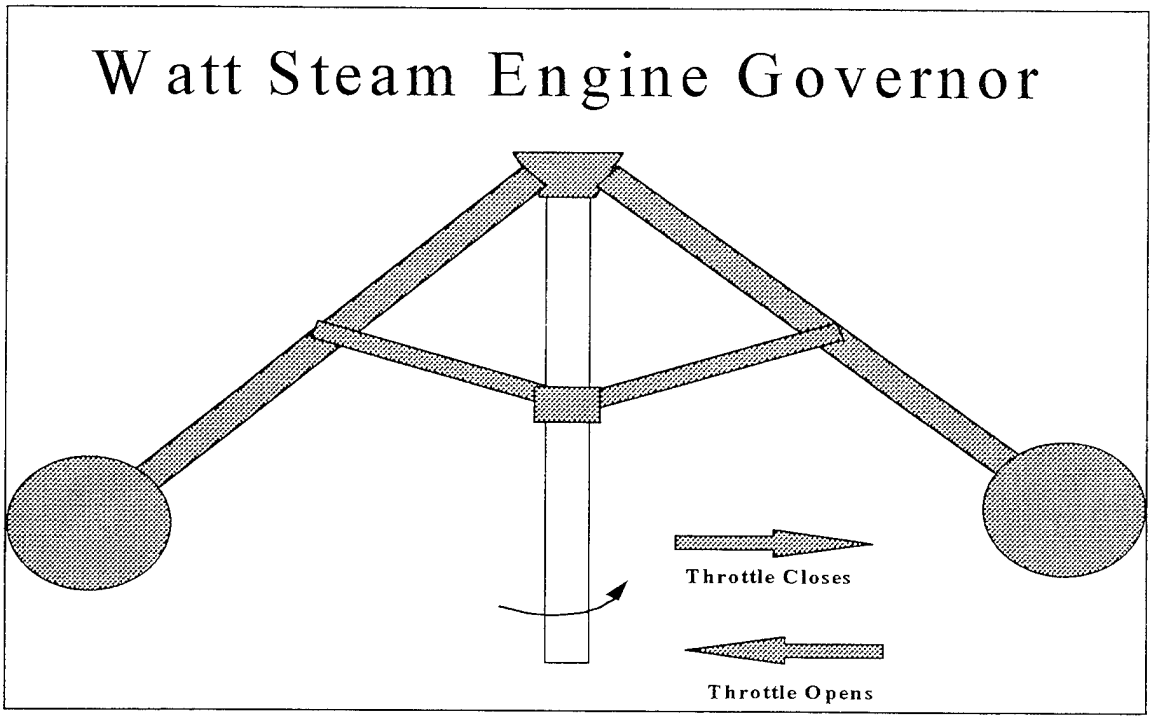

Figure 9: Watt Governor

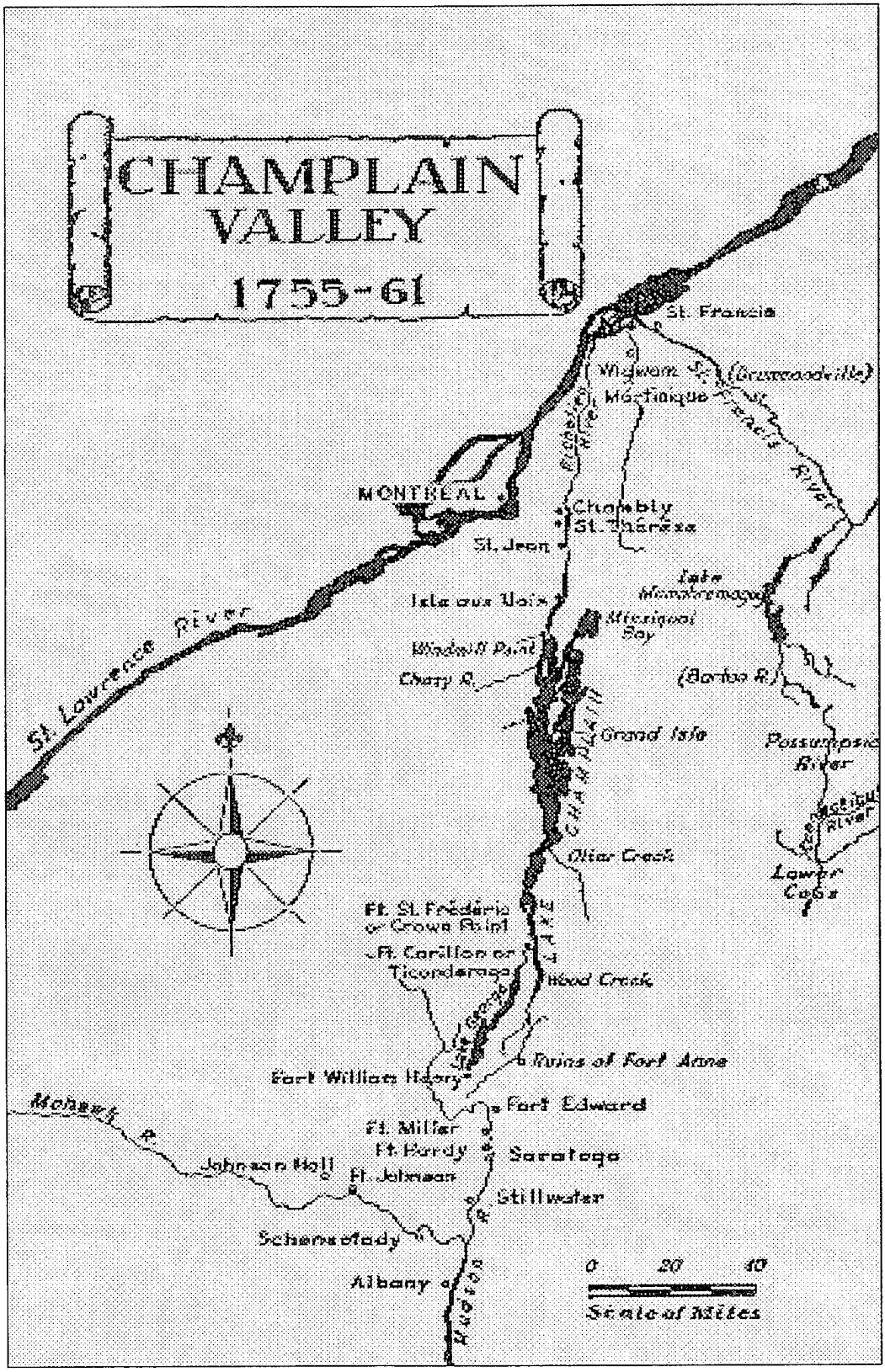

Figure 10: Champlain Valley Map.

Figure 11: Major Robert Rogers.

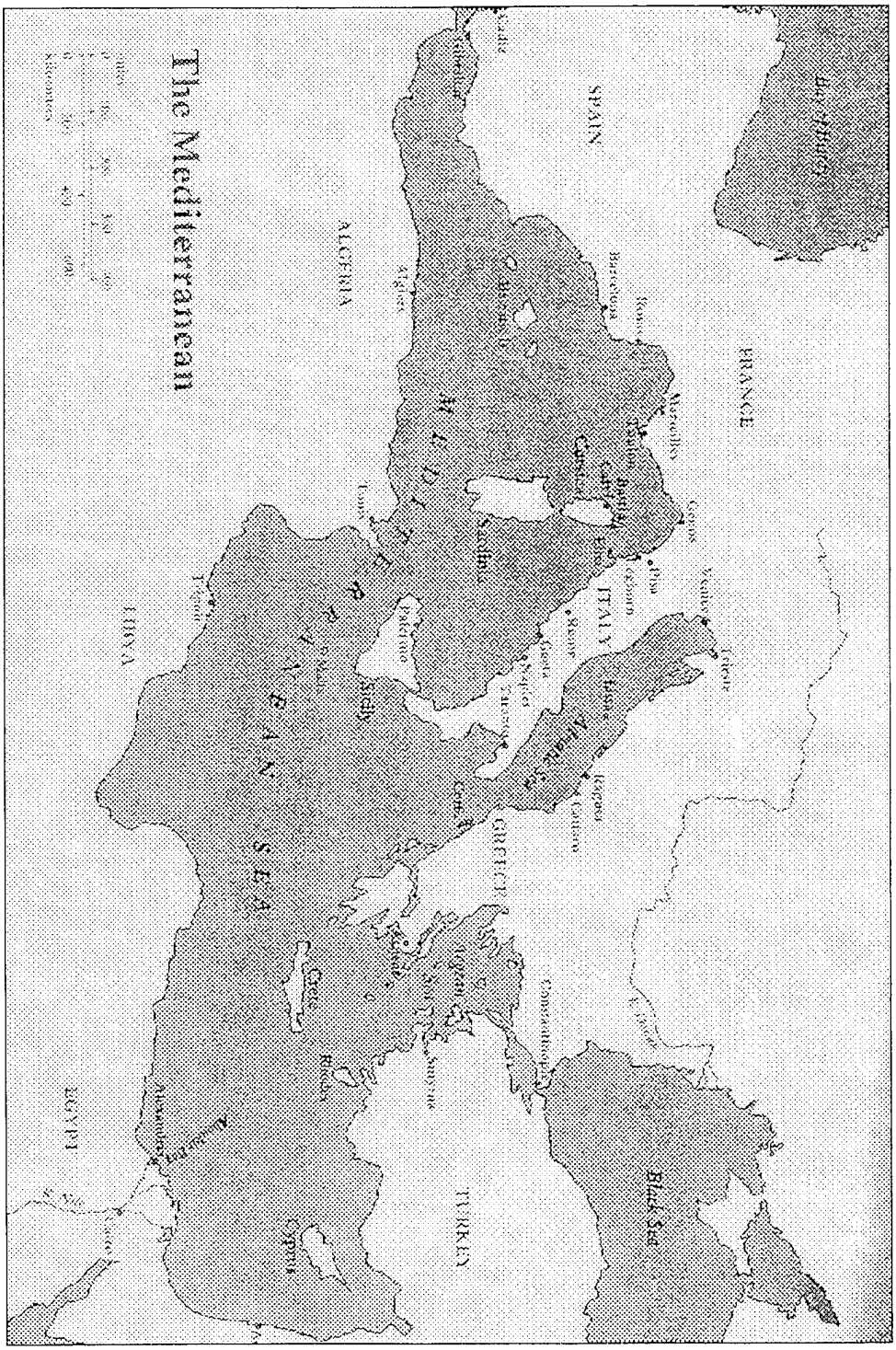

Figure 12: Mediterranean Map.

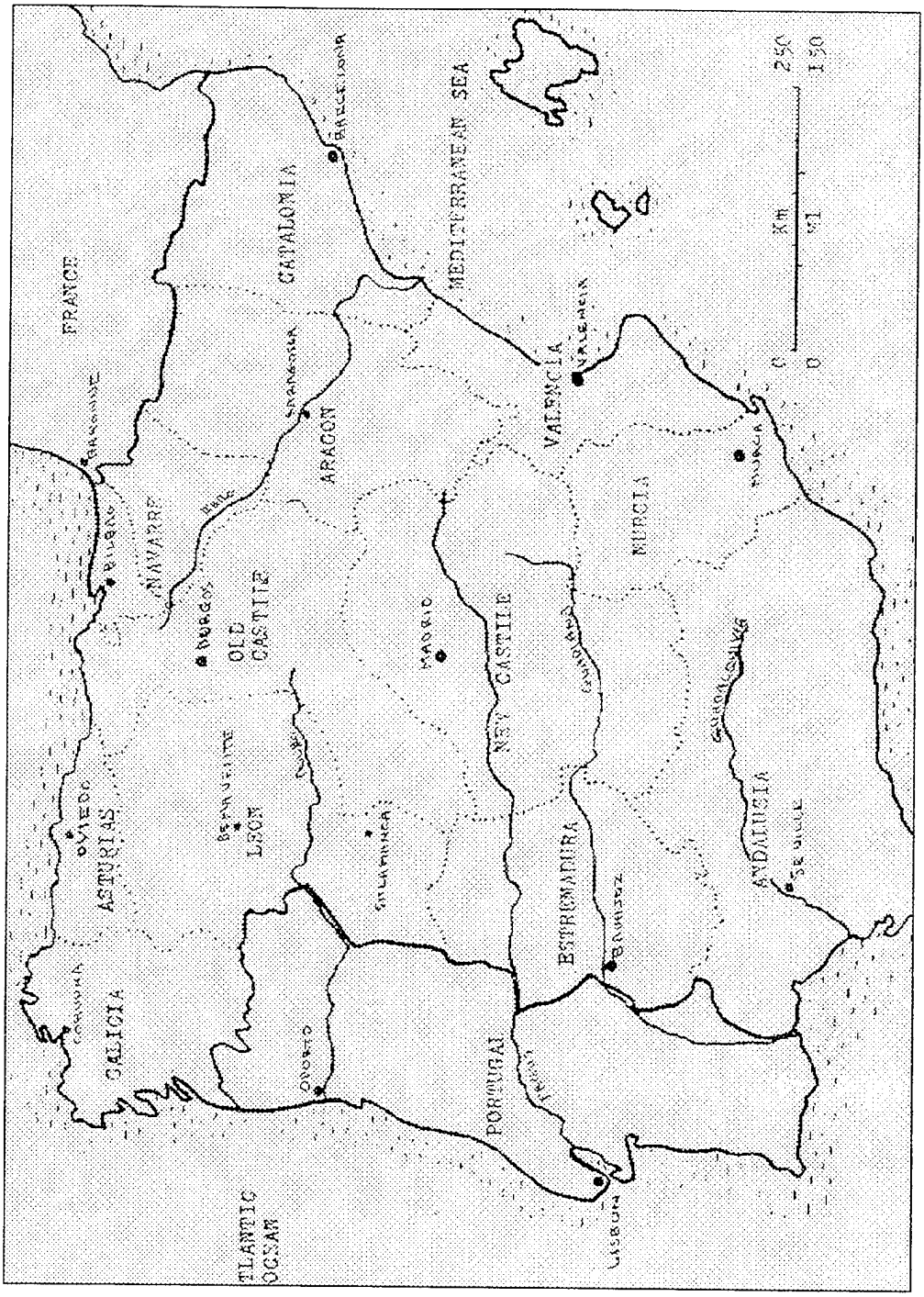

Figure 13: Iberian Peninsula Division Map.

Figure 14: Thomas Cochrane.

Figure 15: Admiral Collingwood.

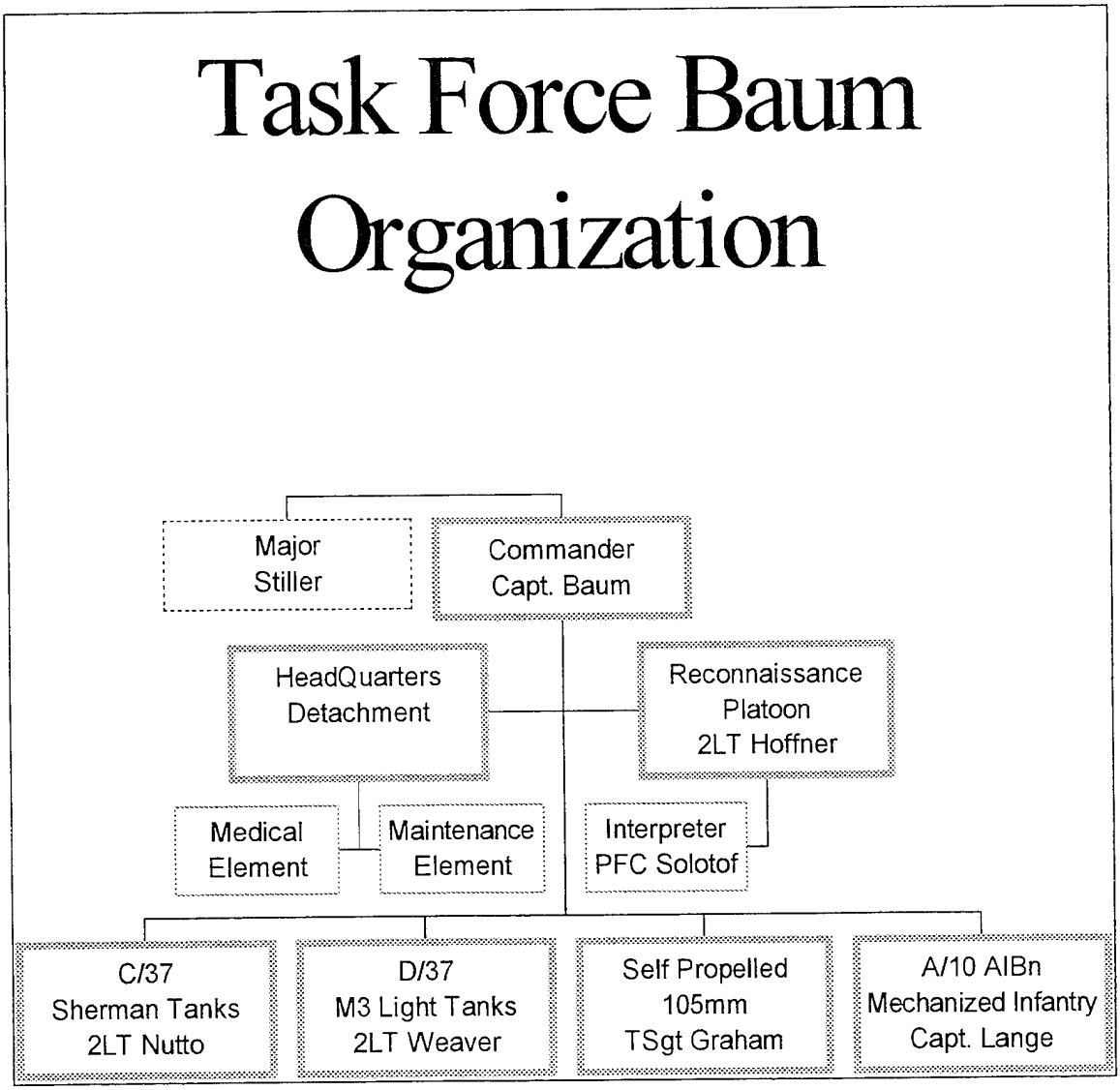

Figure 16: Task Force Baum Organization Chart.

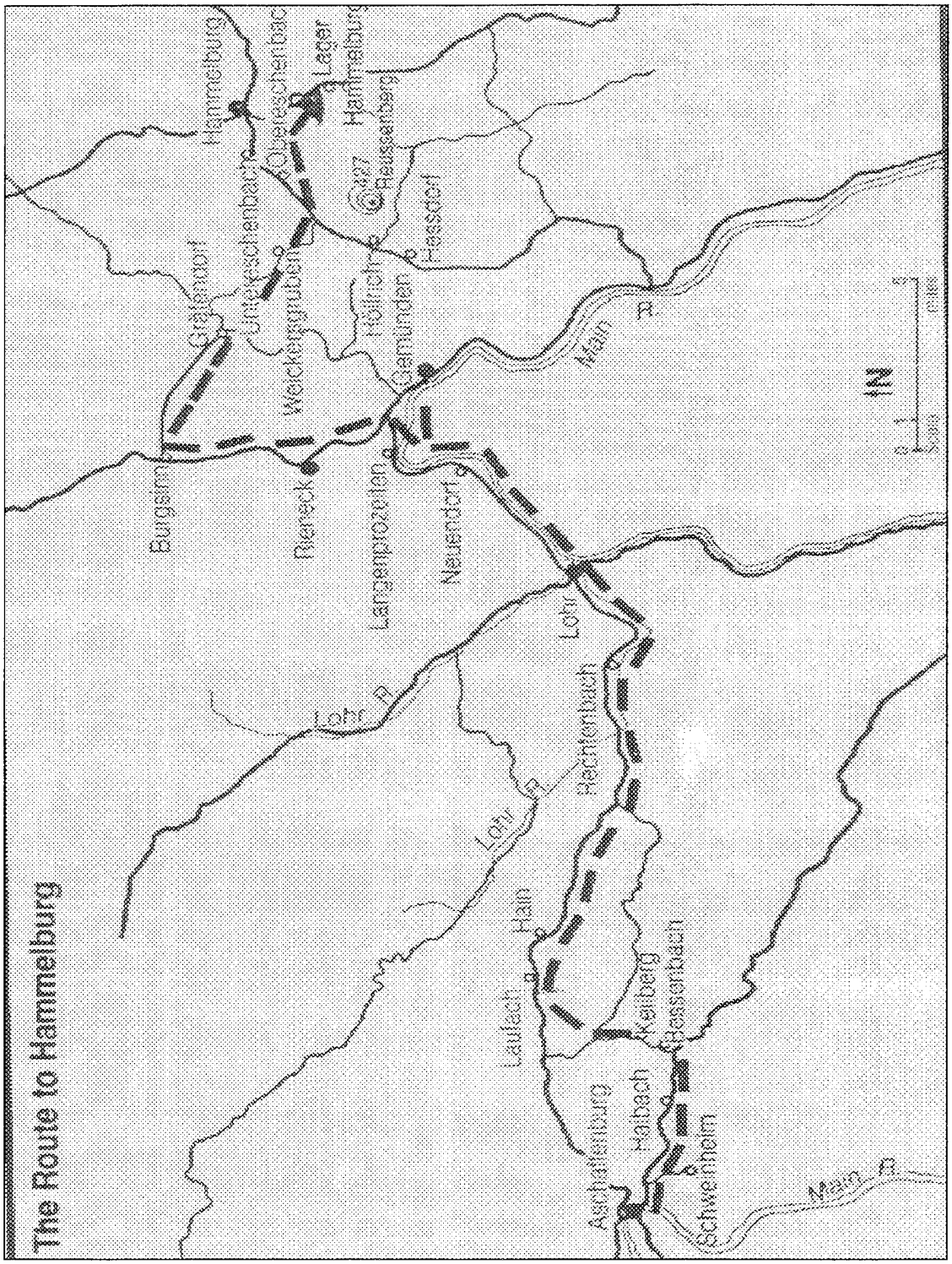

Figure 17: Task Force Baum Approach Map.

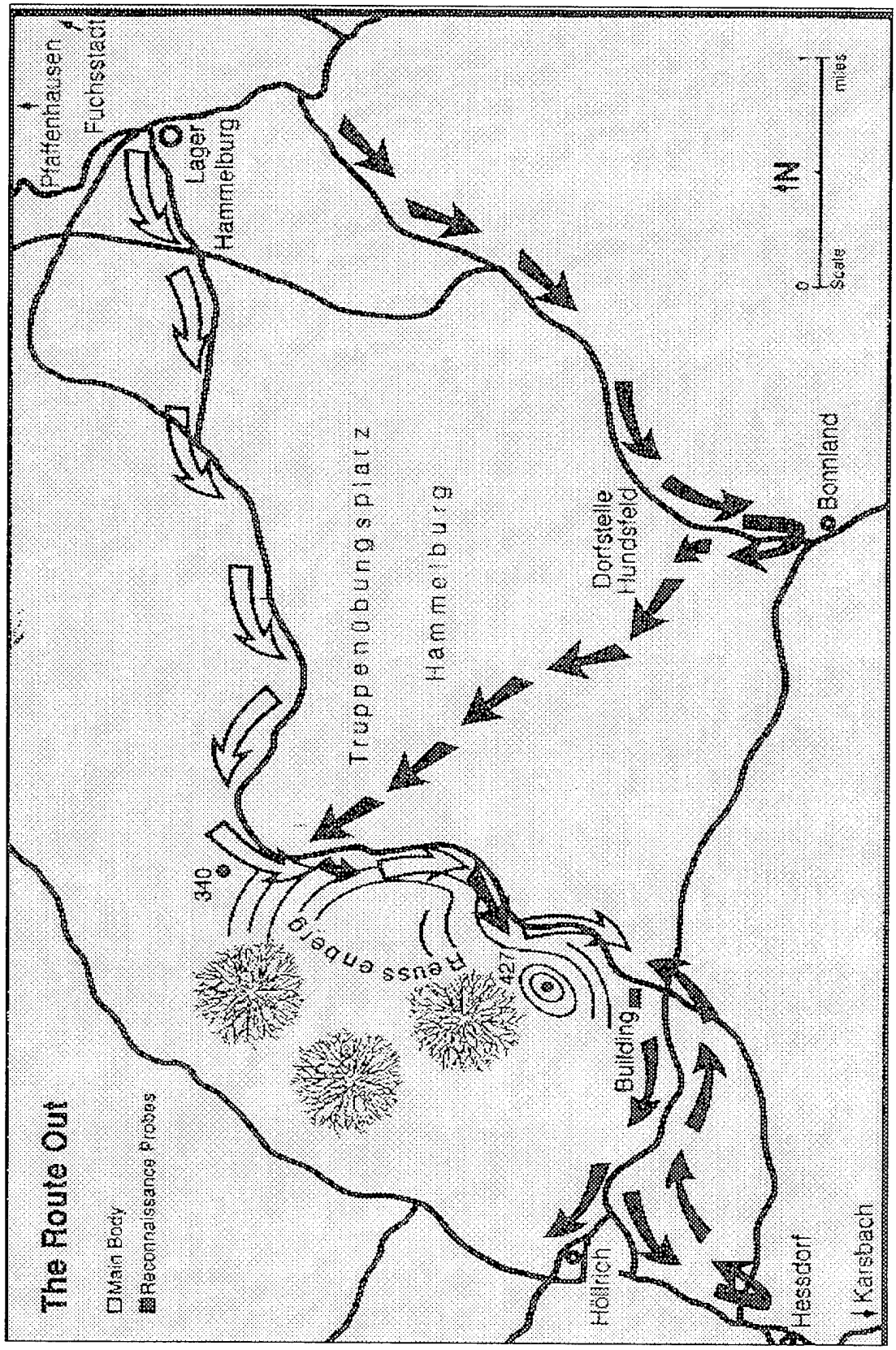

Figure 18: Task Force Baum Escape Map.

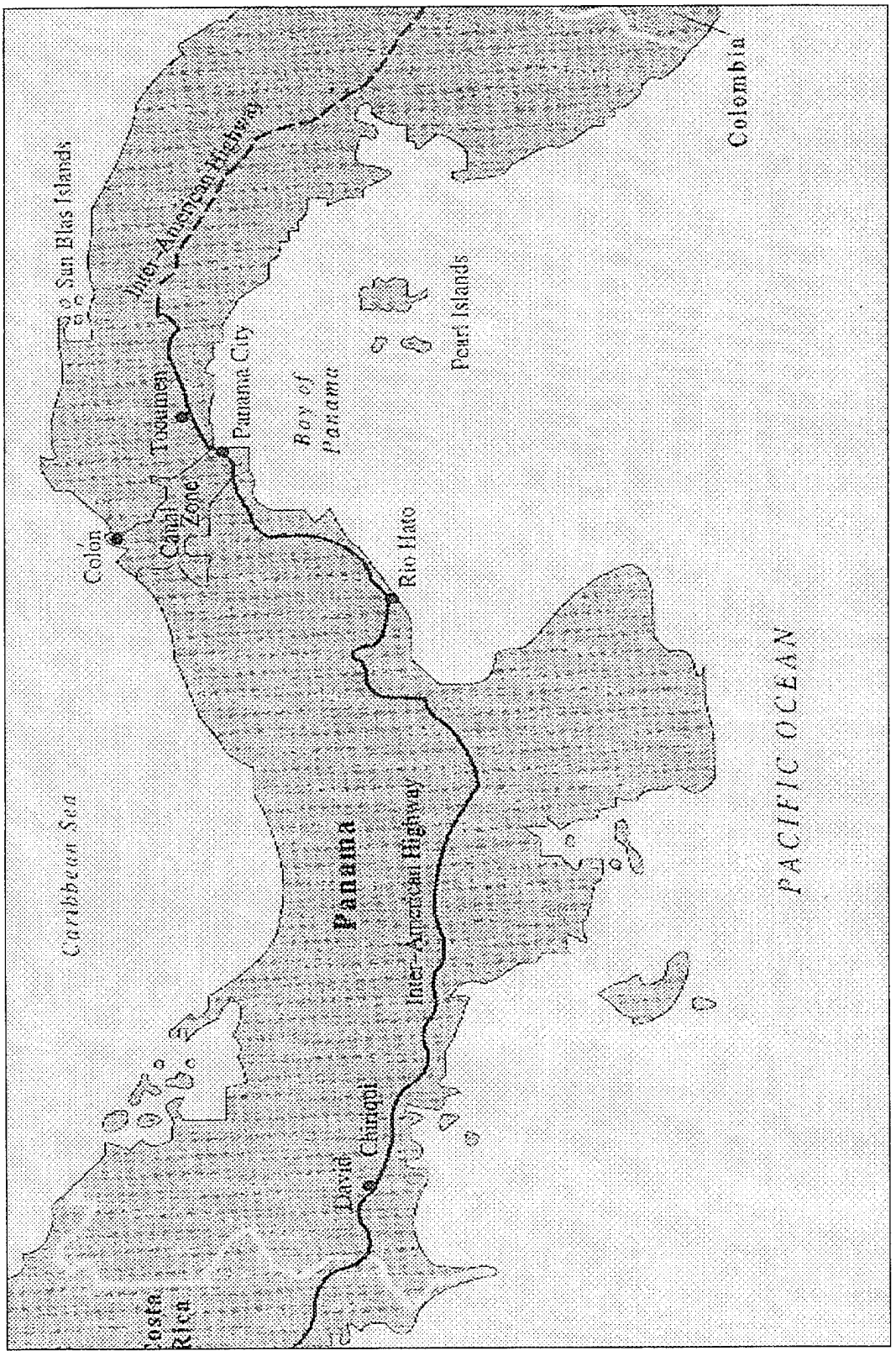

Figure 19: Panama Map.

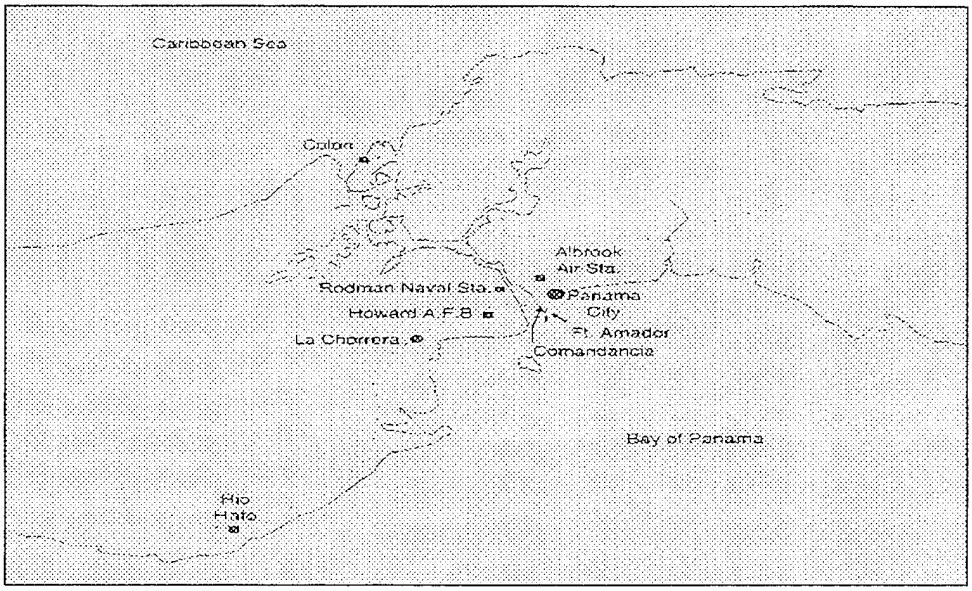

Figure 20: Panama Canal Zone Map.

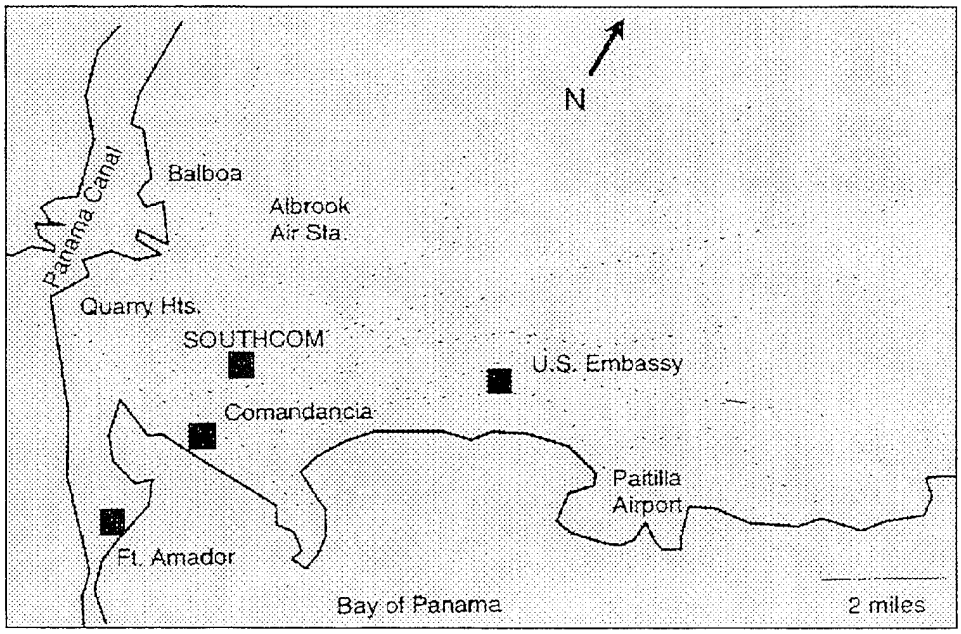

Figure 21: Panama City Map.

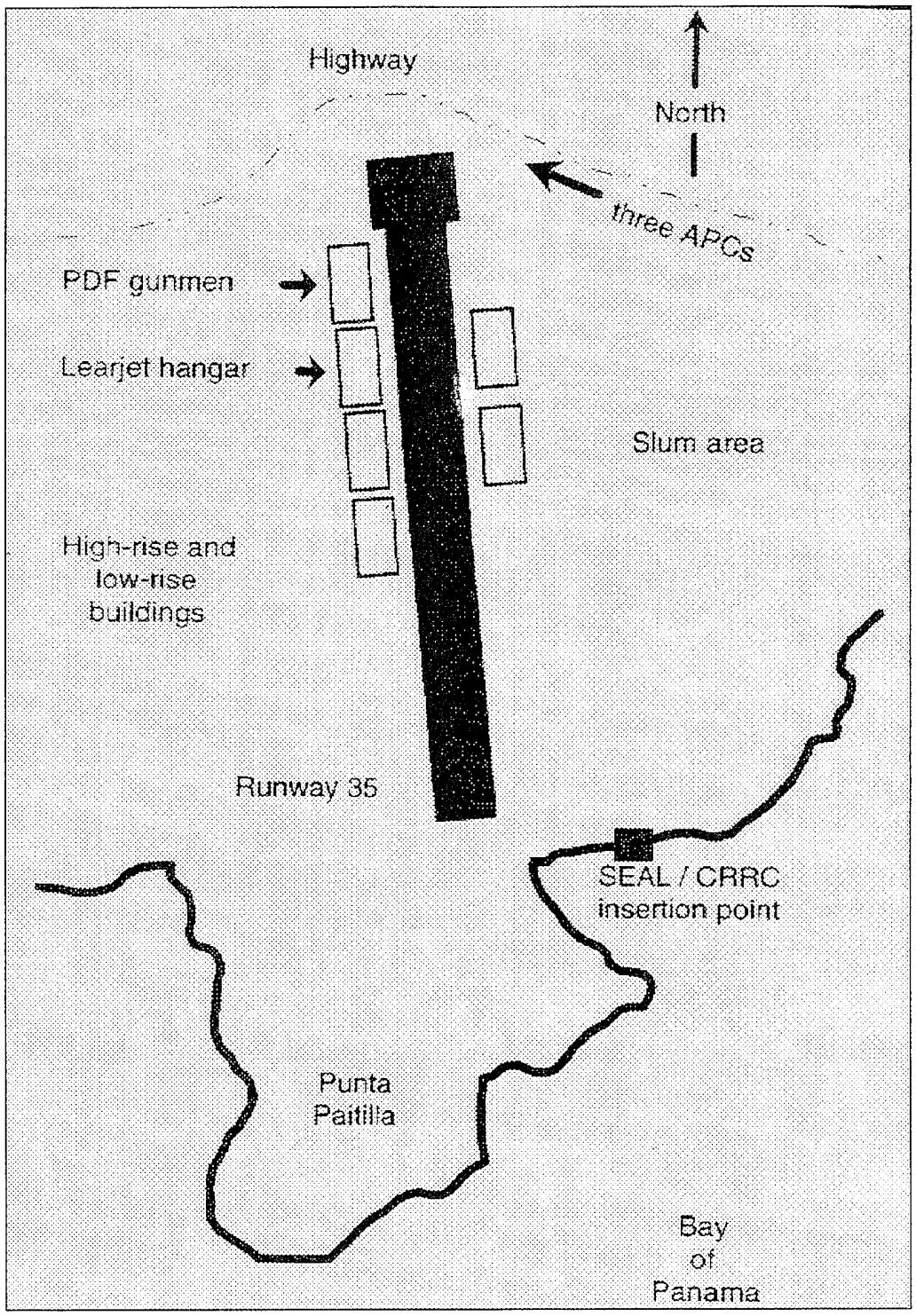

Figure 22: Paitilla Airport Map.

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