FLEXIBILITY, REACH, AND THE VIETNAM FIRE BASE

A Monograph

By

MAJ Eric Treschl
United States Army

School of Advanced Military Studies
United States Army Command and General Staff College
Fort Leavenworth, Kansas

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Approved by:

_____, Monograph Director
Bruce E. Stanley, Ph.D.

_____, Seminar Leader
Charles M. Evans, COL

_____, Director, School of Advanced Military Studies
Henry A. Arnold III, COL

Accepted this 23rd day of May 2013 by:

_____, Director, Graduate Degree Programs
Robert F. Baumann, Ph.D.

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ABSTRACT

FLEXIBILITY, REACH AND THE VIETNAM FIRE BASE, by MAJ Eric Treschl, U.S. Army, 50 pages.

The U.S. military historically uses basing as a means to extend operational reach during sustained operations. These same bases offer maneuver commanders options regarding risk and flexibility during missions. In the Vietnam War, the Fire Support Base served as a location for indirect fire systems to support the ground commander. These Fire Support Bases evolved to the modern day Forward Operating Base currently employed in Afghanistan. The purpose of this monograph is to identify some factors that affect the selection of base locations in order to improve efficiency in providing support for the maneuver commander. This monograph focused on how Fire Support Bases were employed during the Vietnam War in different operational strategies. The study found that Fire Support Bases significantly increased operational reach and depth, and furthermore, provided significant options that both reduced risk and increased flexibility to ground commanders.

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ACRONYMS

AVRN	Army of the Republic of Vietnam
COIN	Counterinsurgency
DRV	Democratic Republic of Vietnam
DOD	Department of Defense
FB	Fire Base
FOB	Forward Operating Base
FSB	Fire Support Base
FSSB	Fire Support and Surveillance Base
LOC	Line of Communication
LZ	Landing Zone
MAAG	Military Assistance Advisory Group
MACV	Military Assistance Command Vietnam
NVA	North Vietnamese Army
PB	Patrol Base
SEATO	Southeast Asia Treaty Organization
SOP	Standard Operating Procedure
TTP	Techniques, Tactics, and Procedure
VC	Viet Cong

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INTRODUCTION

The idea of establishing a Fire Base (FB) or Fire Support Base (FSB) is not new and serves to increase the operational reach in foreign lands. These bases serve as temporary encampments that provide artillery support to infantry units and have evolved into the current day Forward Operating Base (FOB). Many factors affect the location of a FB and must be considered during the initial stages of the planning process. The FOB is a multi-faceted idea that can assume different shapes and construction based on the terrain, the purpose of the base, and the overall strategy in the area. The goal of this project is to identify factors that affect the choice of base locations in order to improve efficiency in providing fires and effects for the maneuver commander.

Considering the demands and use of FOBs today, is there a more efficient way to provide sufficient fires and effects in this resource-limited environment? The U.S. Army historically built bases in foreign areas to increase the depth and operational reach. The choice of location for bases typically includes the environment, maneuver, or logistic capabilities, and, as a result, creates potential gaps in fires. The problem is the selection of base locations is typically dependent on many variables, but fires coverage is not a primary factor.

The purpose of this monograph is to identify key variables when selecting base locations that optimize fires and effects, maneuver, and logistics. The importance of ensuring this is executed correctly during the initial stages of planning cannot be overemphasized. Regarding the limited resources of time and material, decisions during the early stages of planning may result in resource inefficiency and less than optimal results in providing indirect fires for maneuver commanders. The ideal choice of base location also serves to minimize both resource utilization and dead space areas. The findings of this study can help guide planners in the choice of base locations for future operations.

Historically, the U.S. military establishes bases during sustained operations. This technique allows forces to increase operational reach and depth by establishing a line of communication (LOC). Furthermore, these bases offer the opportunity to provide secure areas for fire support assets. These assets support the operational commander, increase their flexibility, and reduce their risk. As a result, the choice of base locations can influence the overall campaign strategy.

The concepts of the FOB and the strategy of Counterinsurgency (COIN) are necessary to this study. The FOB, as defined by the Department of Defense (DOD), "refers to a location used to support tactical operations without establishing full support facilities and possibly used for an extended period. This may require additional support from a main operating base. It is also used to extend command, control, and communications capabilities."[1] FOBs evolved from the FB concept used during the Vietnam War. The next fundamental concept is the phenomenon of COIN. David Galula defines an insurgency as "a civil war, and a pursuit of policy of a party inside a country by every means."[2] DOD refers to COIN "as a comprehensive civilian and military effort to defeat an insurgency and to address any core grievances."[3] FOBs provide a means for forces to get close to the population and provide options for confronting an insurgency.

Insurgencies have been occurring for centuries and "are complex, dynamic, and adaptive. They can rapidly shift, split, combine, or reorganize."[4] A COIN operation seeks to defeat an insurgency with combined civilian and military efforts. In order to do this, the commander must thoroughly understand the insurgency, the environment, what the primary grievance is, and

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[1]U.S. Joint Chiefs of Staff, Joint Publication (JP) 1-02, *Department of Defense Dictionary of Military and Associated Terms* (Washington, DC: Headquarters, Joint Chiefs of Staff, 2013), 105.

[2]David Galula, *Counterinsurgency Warfare: Theory and Practice* (New York: Hailer Publishing, 2005), 3.

[3]U.S. Joint Chiefs of Staff, Joint Publication (JP) 3-24, *Counterinsurgency Operations*, 5 October 2009 (Washington, DC: Headquarters, Joint Chiefs of Staff), GL-5.

[4]Ibid., ix.

clearly define the problem. Although there are many types of insurgencies with multiple variables, the battle for the support of the local population remains one of the most prominent aspects for both sides.[5] Insurgents typically have a finite ability to generate resources and needs the support of the local population for those additional resources. Conversely, the counterinsurgent does not want the population to provide resources that fuel the insurgency as the insurgency will weaken without resources. In this context, these variables should be significant considerations during the strategic planning process concerning base location. A base in the right place, with the right capabilities, can provide the operational commander with options for flexibility and risk.

Base locations can directly affect the strategy of an operational commander. In order to address the importance of site selection, it was beneficial to conduct a descriptive analysis to determine key variables considered for base locations used in Vietnam. Based on this goal, the thesis is the U.S. military builds bases in order to generate operational reach, but permits terrain, maneuver and logistic requirements to influence their locations. As a result, these bases have areas without fires coverage, which decrease flexibility and increase the overall risk to forces. The research hypotheses follow:

1. If terrain, maneuver, or logistics influences base locations, then risk will increase and flexibility will decrease.
2. If fires influence FOB locations, then risk will decrease and flexibility will increase.

Five research questions guide this monograph and assist in determining variables considered in determining Vietnam base locations. The first two questions address the number bases and their locations. The next question seeks to determine their primary purpose. The fourth

[5]Galula, 8.

question seeks to identify variables considered when determining bases. The final question seeks to identify combat operations close to any of the bases. The questions of the study follow:

1. How many bases were built?
2. Where were the bases located?
3. What was the primary purpose of the base?
4. What variables were considered when deciding base locations?
5. Were major combat operations conducted near the bases?

This monograph faces two primary limitations. The first limitation deals with the security classification of information of all research material used to gather this data. To ensure widest release and analysis of this work, all information contained within, as well as all reference material used in the compilation of this effort, is unclassified. The second limitation is this monograph relies primarily on open source U.S. interpreted documents.

Although bases are and have been used in other environments, the delimitations utilized by the researcher in this study were determined by a desire to gain a better understanding of base locations in Vietnam, and considers only bases located and used during the Vietnam War. This narrow focus seeks to provide insights and offer lessons appropriate for other locations.

This study includes two assumptions. First, the Vietnam War is recognized as a legitimate COIN operation, and is used as a model for such an action. The second assumption is that bases were planned and designed with specific functions and purposes.

This monograph contains five sections: an Introduction, a Literature Review, a Methodology, a Case Study, and a Conclusion. The introduction sets the conditions, limitations, and background for this study while formalizing the hypothesis and the questions that aim to validate or invalidate it. The literature review discusses the COIN theory, the importance of operational reach, and fires and effects in support of maneuver elements. The methodology section addresses the relevance of the Vietnam case study, drawing on conclusions derived

through data collection and analysis procedures. The case study focuses on variables considered when determining FOB locations. Finally, the conclusion provides a brief summary of the entire monograph, a discussion of the findings, implications, and recommendations for future application.

LITERATURE REVIEW

This section aims to show the reasoning behind researching the relationship between bases and fire support by highlighting the available literature and identifying any trends based on these sources. The majority of literature discussing bases and fire support related to the scope of this monograph involves a multitude of resources with varying perspectives. With that understanding, bases provide a significant influence on the level of operational risk and the amount of flexibility employed near a base. This section presents literature pertinent to this area and begins with a discussion of COIN theory. Finally, the concepts of FOB, operational reach, operational risk, flexibility, and dead space are further developed.

Counterinsurgency theory has roots that date back to the beginning of warfare. Ironically, John Nagl asserts that low intensity irregular warfare has actually been more common than traditional state on state conflicts.[6] Initially, those who stood up to a state were viewed as criminals, not necessarily as an organized threat. The legitimacy of violence toward a state came from nationalism coupled with the notion of individual liberty.[7] The longer the violence occurs with perceived population support, the cause, and means to the end eventually became legitimate. This idea supports Peter Berger's assertion regarding the concept of the social construction of reality in that, when actions or ideas are perceived as legitimate, they tend to become socially

[6]John A. Nagl, *Learning to Eat Soup with a Knife: Counterinsurgency Lessons from Malaya and Vietnam,* Paperback ed. (Chicago: University Of Chicago Press, 2005), 15.

[7]John Ellis, *A Short History of Guerrilla Warfare*. (New York: St. Martin's Press, 1976), 7.

accepted.[8] In the case of an insurgency, when the population perceives the ideas and causes of the insurgents are legitimate, it creates a support base. The population then assumes a crucial role in this type of warfare. This battle for the support of the population is a significant part of revolutionary movements.

Seizing power from the legitimate government is part of the main motivation that drives insurgents. The insurgents have the initiative because they are the ones that must make the first move. The counterinsurgent, initially reactive, aims to maintain legitimate power. Counterinsurgency only results from an insurgency and only defined by reference to its cause. A key element is that insurgents fight using an asymmetric pattern in all directions and not in a linear fashion. The strength of an insurgency relies on avoiding the better-trained and armed counterinsurgent's main fighting forces. The insurgent's primary methods are to strike at outposts and logistical support centers from unexpected directions. As their cause becomes legitimate, they look to the local population to generate their growth through either recruiting people or obtaining supplies and resources. On the other hand, the counterinsurgent seeks to interrupt, destroy, or isolate the insurgent by using an approach that is enemy centric or directed toward the population.

The enemy centric approach is a direct approach based on Antoine-Henri Jomini's interpretation of the Napoleon wars, and is focused primarily on defeating the armed forces.[9] This method requires counterinsurgents to seek out, disarm, and destroy the insurgent. The challenge with this method is that an insurgency is typically an army of the local people. Mao's theory of revolutionary warfare is that the warriors are part of the people and live among them.[10] Therefore,

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[8]Peter L. Berger and Thomas Luckmann, *The Social Construction of Reality: a Treatise in the Sociology of Knowledge* (New York: Anchor, 1967), 3.

[9]Nagl, 27.

[10]Ibid., 28.

insurgents can easily hide and disappear among the local population, increasing the difficulty of the counterinsurgent to determine legitimate targets.

The indirect approach focuses on the importance of the population. If insurgents rely on population support to advance their cause, then the counterinsurgents focus efforts on that support base and indirectly influence the insurgency. The indirect approach focuses on dividing the people from the insurgents and removing the support that insurgents require to advance their cause. The primary challenge to this approach is it is time consuming, meaning it takes longer to see results, but it is usually more effective in the long term.[11] Winning the population support is essential in a counterinsurgency campaign.

The COIN strategy is a significant factor in determining where FOBs are located. If the approach is enemy centric, then a FOB located near a population center allows friendly forces to monitor and engage armed combatants. Additionally, friendly forces must be able to engage the insurgents in and on their territory, possibly requiring additional basing. A population centric approach requires a FOB to be located near a population center with a goal to influence the population in order to disrupt insurgent behavior.

Forward Operating Base

The modern day FOB is an area used to "support tactical operations without establishing full support facilities. FOBs can be used for an extended period and may be supported by main bases."[12] FOBs are characterized with a defined perimeter, established access controls, and take advantage of natural and fabricated features. FOBs were initially designed to be temporary facilities or locations, but have a tendency to grow in size or change in purpose. There is a relationship between the amount of equipment or capability versus the amount of infrastructure

[11]Nagl, 28.

[12]Joint Chiefs of Staff, JP 1-02, 105.

required. If FOBs are located outside a population center, they may require additional infrastructure or security. If FOBs are located within a population center, then the requirements may be accommodated more toward social integration or promoting stability than on engaging enemy combatants. During the time of the Vietnam War, a FOB was referred to as "Firebase (FB), Fire Support Base (FSB), Forward Fire Support Base, Patrol Base (PB), Fire Support Patrol Base, Landing Zone (LZ), Camp, and Basecamp. These terms are often interchanged because names of basing were based on the local unit Standard Operating Procedures (SOPs) which varied unit-to-unit, division-to-division, region-to-region, or year-to-year."[13]

Operational Reach

Joint doctrine refers to operational reach as the "distance and duration across which a joint force can successfully employ military capabilities."[14] Establishing reach in military operations requires a force and a logistic capability to support the force. Simply establishing a foothold in an area does not extend the reach because this capability requires support and resupply. When bases are established, military forces can maintain an effective posture through protected lines of communications (LOCs). FOBs extend and maintain the operational reach by providing secure locations from which to conduct and sustain operations. FOBs not only enable extending operations in time and space but also contribute to the overall endurance of the force. "FOBs allow deployed forces to reduce operational risk, maintain momentum, and avoid culmination."[15] Geography surrounding and separating opposing forces influences operational reach as well as, the actual types of forces operating in the area. For example, fires, maneuver,

[13]Michael P. Kelley, *Where We Were in Vietnam: a Comprehensive Guide to the Firebases, Military Installations, and Naval Vessels of the Vietnam War* (Central Point, OR: Hellgate Press, 2002), xix.

[14]Joint Chiefs of Staff, JP 1-02, 208.

[15]U.S. Army, Army Doctrine Reference Publication (ADRP) 4-0 (FM 4-0), *Sustainment* (Washington, DC: Headquarters, Department of the Army, 2012), 3-10.

and logistic forces increase the range of operations around a base by improving security near the base and potentially strengthening the local economy. This also enables further communication capability throughout the immediate area. Sustained presence contributes to deterrence and promotes a secure environment that may strengthen the effects of diplomatic, economic, and informational programs.

Operational Risk

"Opportunities come with risk and the willingness to accept prudent risk is often the key to exposing enemy weaknesses. Commanders accept prudent risk when making decisions because uncertainty exists in all military operations."[16] This uncertainty means there is always some level of risk in all military operations. One way to mitigate this risk is by establishing bases and deploying capabilities forward. Bases provide the way to deploy assets in a relatively secure environment and extend coverage to maneuver units. These assets provide flexibility and create options for leaders while lowering risk to forces. Commanders continually try to mitigate risk by identifying, assessing, and controlling variables that balance risk with respect to mission accomplishment. Establishing bases is one factor to help manage this risk.

Flexibility

Commanders seek to demonstrate flexibility by employing a "versatile mix of capabilities, formation, and equipment while conducting operations."[17] Commanders achieve flexibility when they have options and are able to act at the right time with the right force and establishing bases are one of the ways to do this. Flexibility is created when commanders have

[16]U.S. Army, Army Doctrine Publication (ADP) 6-0, *Mission Command* (Washington, DC: Headquarters, Department of the Army, 2012), 5.

[17]U.S. Army, Army Doctrine Reference Publication (ADRP) 3-0, *Unified Land Operations* (Washington, DC: Headquarters, Department of the Army, 2012), 7.

the capability to act quickly and integrate options across the range of military operations. This requires commanders to plan, have critical thought processes, and recognize the right time to act.

Dead Space

When a unit occupies a new area, it first establishes a defensive posture and conducts position improvement. This drill is conducted at squad and platoon levels in accordance with unit SOPs, and nests within the higher headquarters defensive plans. These plans integrate and synchronize within an operational area to ensure efficient fire coverage based on input from all units. They indicate sectors of fire, key reference points, and dead space. Dead space is simply that area that "cannot be observed or covered by direct or indirect fire system."[18] The commander must continually manage these areas especially in the case of conducting patrols or engaging enemy combatants. Dead space areas are one of many factors of risk and considered when developing operational plans. Moving weapon systems, leveraging weapons capabilities, and integrating other technology can minimize dead space areas.

This literature review addressed the role of basing and the corresponding relationship of risk and flexibility. FOBs enable operational reach, increase flexibility, and provide additional layers of protection for forces. Integrating fire support assets throughout base planning can increase these outcomes. A thorough analysis of fire support assets could identify redundancy, provide a way to reduce assets in an area, and provide commanders another way to manage operational risk.

METHODOLOGY

The primary goal of this monograph is to examine research questions related to bases, operational risk, and flexibility. First, this monograph used the Vietnam War for the case study.

[18]U.S. Army, U.S. Army Field Manual (FM) 3-21.9, *The SBCT Infantry Rifle Platoon and Squad* (Washington, DC: Headquarters, Department of the Army, 2002), H-3.

Second, five questions guide the case study analysis of FSB and aid in the gathering of data. Those selected were formulated with a set of "standardized, general questions and are grounded in the theoretical and research objectives of the study."[19] Once answered, they will be applied to the case study and help determine the validity of the proposed hypothesis: if terrain, maneuver, or logistics influence base locations then operational risk will increase and flexibility will decrease.

This study uses George and Bennett's structured, focused comparison method to examine bases and the relationship to operational reach, risk, flexibility, and dead space. [20] This method maintains structure with the use of five questions and employs focus as it analyzes bases and TTPs used during the Vietnam War. First, how many bases were built? This question is relatively straightforward and seeks to identify the number of bases built in Vietnam. The importance of this question is twofold. First, it may indicate what type of warfare strategy was used, and second, is that each base required additional resources to build and operate. In a resource limited environment, each base established meant resources were no longer available in other places. Finally, this data provides a foundation to address the following questions.

Second, where were the bases located? This question is critical to study for three primary reasons. First, bases located near populated areas could indicate a strategy implying an indirect approach. If bases were located in remote areas, the strategy may be more enemy centric. Second, this shows to what extent terrain influenced FOB locations. Typically, larger bases were established along the well-secured coastal areas. As bases increased their distance from large support bases, they tended to become smaller although more numerous. There were many reasons, but each newly established base required additional security resources that took away from combat power. Third, bases located close to others could have reduced dead space areas or

[19]Alexander L. George and Andrew Bennett, *Case Studies and Theory Development in the Social Sciences* (Cambridge, MA: The MIT Press, 2005), 69.

[20]George and Bennett, 67-72.

unintended redundancy in coverage areas. Unintended redundancy results in inefficient resource management.

The third and fourth questions are what was the primary purpose of the base, and what variables were considered when deciding base locations? Typically, large bases focused on command and control, logistic capability, or security for LOCs, and the local population. Smaller bases assumed different roles that could include interdiction, extend the operational reach, increase flexibility, or simply disrupt enemy operations. Variables determining the number and location of bases stemmed from operational strategy, geographic terrain, and security factors.

Fifth, were major combat operations located near bases? This question is important because the expectation is that not all bases were near major combat operations. The assumption is that when combat did occur near bases that the bases played a major role in the outcome of the event. This question will help to determine if the characteristics of these bases were different from those that were not involved in major combat operations

A review of past and current doctrine, battle summaries, professional military journals, and historical texts provide the data required for the analysis of this monograph. Historical texts and battle summaries provide the necessary framework to determine the strategic environment, preliminary base locations, and functions. Doctrine and military journals provide a foundation for overall strategy used during this war.

The structured focus comparison method centers on five questions relevant to FSB utilization and focuses only on the bases employed during the Vietnam War. This method provides the necessary framework to collect information relevant to the study that led to a structured look at the Techniques, Tactics, and Procedures (TTPs) used in Vietnam regarding the evolution of FSBs throughout the war. Bases built around population areas have different characteristics and considerations than those in remote areas. These questions provide a narrow

scope and identify relevant information to be used in the analysis of the hypothesis and the corresponding relationship of bases, risk, and flexibility.

CASE STUDY

The Vietnam War presents an excellent case study to explore the arguments of this paper. The U.S. Army faced both a conventional enemy in the North Vietnamese Army (NVA) and an unconventional force in the Viet Cong (VC). Both of these enemy forces have a long distinguished history of warfare. Although the U.S. has experience in conventional warfare, guerilla warfare requires different combat tactics and those had to be learned. The VC employed guerilla tactics, conducted decentralized operations, and was critically dependent on LOCs. These LOCs extended across international borders, creating additional friction for the U.S. government. This situation created a challenging environment in developing host-nation security forces while simultaneously conducting combat operations.

The development of the FSB was one tactical solution to this situation. The concept of airmobile tactics allowed friendly forces to move freely on the battlefield, deep behind enemy lines. This generated a requirement to project firepower in order to protect troops operating beyond established coverage areas. The unconventional warfare technique utilized by the VC resulted in noncontiguous battle areas. This asymmetric warfare strategy meant friendly forces had to conduct combat operations in areas away from major base camps and forward of front line of troops or secure lines.[21] The FSB enabled U.S. maneuver forces to overcome this disadvantage and operate in these areas. More often than not, in order to generate that type of operational reach and flexibility while mitigating risk, positions had to be occupied in enemy-dominated territory. This led directly to the use of FSBs.

[21]Lieutenant General John H. Hay Jr., *Vietnam Studies Tactical and Material Innovations* (Washington, DC: U.S. Government Printing Office, 1974), 97.

Overview of Vietnam War

Vietnam, formally known to be part of Indochina, has a long and distinguished history of warfare with opponents that were superior in both military size and capability. To confront their enemies, Vietnam's strategy was warfare that incorporated insurgent tactics. They used tactics incorporating Sun Tzu's idea of avoiding the opponent's strong point while attacking their vulnerabilities.[22] This strategy leveraged their strengths of speed, agility, and nationalism. Big armies are slow to move, complex to control, and are vulnerable in those instances. Vietnam's use of asymmetric warfare enabled them to avoid enemy strong points and exploit their enemy's weak points leading to a tactical advantage.

As a southern province of China, Indochina struggled for hundreds of years for independence. Indochina defended itself against the Mongols of Kublai Khan by making use of the harsh terrain and climate.[23] After winning independence from China, Indochina continued its struggle with internal security and civil war until 1883 when the French imposed peace and established Indochina as a French Protectorate under the Treaty of Hue.[24] The treaty lasted until 1941, when the Japanese seized Indochina from the French. The Viet Minh, a Communist insurgency led by Ho Chi Minh, met this threat. Ho Chi Minh concentrated on using irregular warfare tactics inspired by Chinese models of Mao Zedong, and perfected over hundreds of years.[25] France attempted to reoccupy Indochina after the defeat of the Japanese at the end of World War II. The Viet Minh, now well experienced in fighting against the Japanese, continued

[22]Tzu, Sun, *The Art of War* (London: Oxford University Press, 1971), 66.

[23]Robert Doughty et al., *Warfare in the Western World* (Lexington, MA: Cengage Learning, 1996), 902.

[24]R. Ernest Depuy, *The Encyclopedia of Military History* (New York: Harper Collins Publishers, 1993), 943.

[25]Doughty, 903-4.

to fight the French, which eventually became the Indochina War.[26] "American involvement began in the late 1940s with arms aid to the French. Old alliances and the outbreak of the Korean War placed the United States in a political position supporting French colonial policy."[27] Simply put, this was a complex regional and political environment in an area viewed as fragile and globally significant.

The Indochina War, coupled with the collapse of the Nationalist Chinese government in 1949 and the Korean War in 1950, fed into the American strategy of communist containment whereby Indochina became "the key to Southeast Asia."[28] Containing communism in this region was a priority to the leadership of the American government and led to the creation of the U.S. Military Assistance Advisory Group (MAAG) in 1950.[29] This group worked with the French whereby, despite losses, an eventual peace negotiation was achieved, which resulted in Indochina separating into four countries: Laos, Cambodia, South Vietnam, and the Democratic Republic of Vietnam (DRV). This set conditions for the U.S. to support South Vietnam and continue to counter communism in the region, resulting in an alignment against the DRV, which pursued an insurgent war with the goal of unifying North and South Vietnam. "In 1955, President Dwight D. Eisenhower, acting under extended provisions of the Southeast Asia Treaty Organization (SEATO) protocol, pledged material and advisory assistance to the South Vietnamese. As French Union forces left Vietnam, American military advisory groups assumed responsibility for training the Vietnamese Armed Forces."[30]

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[26]Andrew F. Krepinevich Jr., *The Army and Vietnam* (Baltimore, MD: Johns Hopkins University Press, 1988), 19.

[27]Carroll H. Dunn, *Base Development in South Vietnam, 1965-1970* (Washington DC: Department of the Army; U.S. Government Printing Office, 1972), 6.

[28]Krepinevich, 18.

[29]Ibid.

[30]Dunn, 6.

In April 1961, the Kennedy Administration vowed to support South Vietnam, and a military presence rose to four thousand men by the end of 1962. The U.S. employed military advisors to develop and train the Army of the Republic of Vietnam (ARVN) in both conventional and irregular warfare.[31] The experiences of the Korean War provided organization and doctrine models. The challenge was in confronting irregular tactics. This led to an increase in personnel and equipment, organizational restructuring, and eventually a new headquarters, the Military Assistance Command, Vietnam (MACV).[32] At the same time, a new focus on developing TTPs to conduct offensive operations to find and defeat insurgents was occurring. These techniques realized that helicopters and more Air Force units provided additional capability to the ground commanders. However, the insurgents continued to use their tactics and avoid decisive and direct battles with a superior opponent. Even with new tactics and capabilities, the conventional force had difficulty in achieving success on the battlefield.

After the assassinations of South Vietnamese President Ngo Dinh Diem and President John F. Kennedy, President Johnson "saw little choice but to escalate involvement in the Vietnam War and effectively made a decision for full-scale war."[33] This required a new operational approach and strategy as well as an increase in military forces. Led by General William Westmoreland, the MACV Commander, this initiative had two operational approaches: "one focused on clearing insurgents from urban areas and the other focused on destroying the enemy with a series of conventional tactics."[34] To achieve these goals, Westmoreland's strategy employed large tactical formations with three primary operational concepts: search and destroy

[31]Ibid.

[32]Krepinevich, 64.

[33]Doughty, 912.

[34]George L. MacGarrigle and Center of Military History, *Combat Operations: Taking the Offensive, October 1966 to October 1967 (United States Army in Vietnam Series)* (Washington, DC: Center of Military History, 1998), 11-12.

attacks, clear and hold operations, and securing operations.[35] These efforts required military forces to operate in all types of areas and terrain, ultimately leading to the FSB concept.

The Vietnam War proved the importance of a FSB. The FSB was initially designed as a temporary base used to provide artillery fire support to maneuver units operating beyond the range of fire support from their more established bases. Their shape and construction varied based on the terrain they occupied, the projected size of occupying units, and potential missions. One of the first FSBs constructed by U.S. forces was built in October 1965. The First Cavalry Division built FSB Bill in Pleiku Province soon after its arrival in South Vietnam.[36] Based on the original concept developed by the Division, "FSBs would move approximately every two days which helped to minimize security and construction requirements. Over time, this policy changed and FSBs evolved into small forts with all defensive measures those required."[37] Because of this change, many tactical commanders wrestled with the FSB concept because as the size of the camp increased, so would the requirements to secure them. Eventually, conditions got to a point where the cost of constructing, operating, and securing the bases resulted in an inability to accomplish the mission.

Establishing bases near forward operating forces in the field resulted in increased protection and the ability to project other combat enablers. The increased security allowed communication, medical, and headquarters elements forward deployed. The results were immediate because leaders gained increased operational understanding of the environment, and

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[35]Andrew J. Birtle, *U.S. Army Counterinsurgency and Contingency Operations Doctrine, 1942-1976* (Washington, DC: Center of Military History, U.S. Army, 2006), 368-369.

[36]Shelby L. Stanton, *Anatomy of a Division: the 1st Cav in Vietnam* (Novato, CA: Presidio Press, 1987), 1.

[37]J. D. Coleman, *Pleiku the Dawn of Helicopter Warfare in Vietnam,* (New York: St Martin's Press, 1988), 104.

forces were able to receive quick medical treatment. All of these capabilities aided to increase the operational reach.

In order to exploit this capability, a rapid construction technique developed into a deliberate, methodical, and strategic operation. In a decentralized fashion, units developed their own SOPs based on their unique capabilities. Position improvement was a continuous process even though most bases could set a perimeter, emplace weapons, and integrate other technology with overhead cover in one day.[38] Available technology at the time included ground surveillance radars, sensors, and night vision devices. Unit SOPs ensured the FSB plan integrated the newest technology as it became available.

The FSB concept centered on the idea of artillery providing support for infantry operations. The M-101 and M-102 howitzers were the artillery in use at the time. Both weapons had similar ranges of a little more than thirteen kilometers, but the M-102 was lighter and was better suited for airmobile operations.[39] "A six-tube battery set up with five guns in a star pattern and a sixth one in the center served as the base piece."[40] The base piece served as the weapon upon which all other weapons would adjust. This concept resulted in target saturation when all the guns fired upon it and this TTP continues today. Establishing a staggered gun line increases the efficiency and effectiveness of the weapon.

The first question is how many bases were built? The approach to address this question begins with identifying major theater level bases by service and end with a discussion of the FSB. Prior to 1965, Vietnam had only a few bases capable to support military operations. Although French forces were in Vietnam for several years, the bases that were available to support U.S. military operations were minimal. Prior to 1965, only four ports were considered sufficient for

[38]Hay, 104.

[39]Coleman, 105.

[40]Ibid.

receiving the logistics that included Da Nang in the north, Cam Ranh Bay and Qui Nhon on the central coast, Saigon in the south (Figure 1).[41] These harbors had basic capabilities to support deep drafting vessels that would be required for major operations. These initial ports enabled the U.S. to establish a foothold and expand from there but as the war continued and the strategy matured, may more ports would be required. Early estimates by DOD revealed that approximately ninety percent of all supplies would arrive by ship.[42]

[41]Dunn, 37.

[42]Ibid., 50.

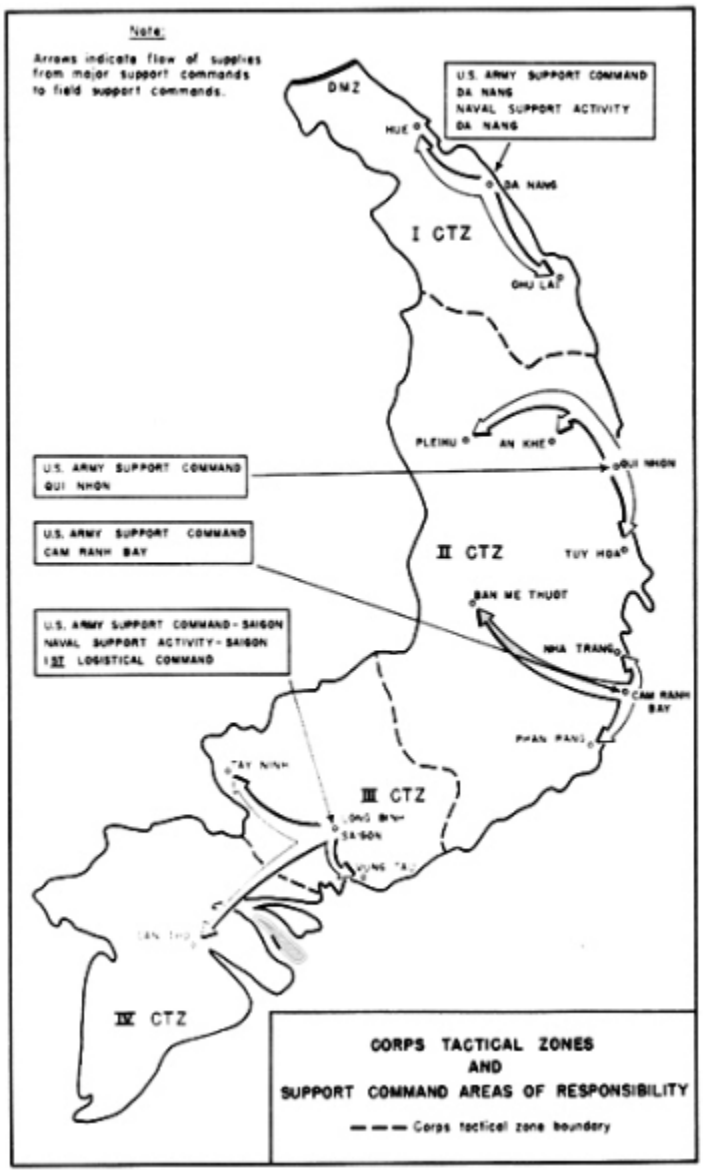

Figure 1. Corps Tactical Zones and Support Command Areas of Responsibility

Source: Carroll H. Dunn, *Base Development in South Vietnam, 1965-1970* (Washington, DC: Department of the Army; U.S. Government Printing Office, 1972) 39.

These main ports set the stage for further support inland. Vietnam's difficult terrain required the establishment of several smaller ports capable to handle shallow-draft vessels and by

1969, eleven more seaports were built to support operations (Figure 2). These additional ports enabled operations throughout the country and provided ways to resupply with shallow draft watercraft, aircraft, and land routes. Eventually they expanded to meet the increased logistical and support required for major combat operations.

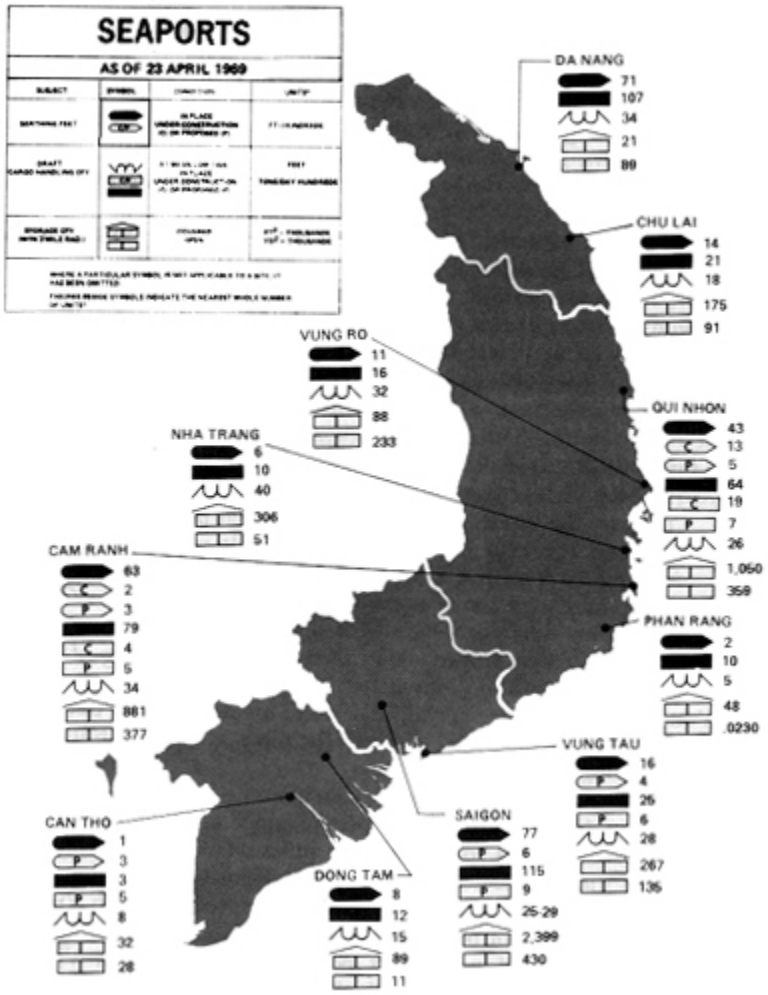

Figure 2. Seaports

Source: Carroll H. Dunn, *Base Development in South Vietnam, 1965-1970* (Washington, DC: Department of the Army; U.S. Government Printing Office, 1972), 60.

Airfields were listed as a critical priority also, but as with the case of the naval bases, the exiting airfields needed improvement. Initially, there were only three major jet air bases in Vietnam capable for operations and two more major airfields would be built before the end of the war.[43] These bases set conditions to extend the reach and depth while supporting forces operated in areas away from larger support facilities. As the war progressed, General Westmoreland's plan was to have an airfield every twenty-five kilometers.[44] Although that did not actually happen, numerous tactical airfields were established in Vietnam (Figure 3). While Figure 3 is not legible, it depicts approximately eighty-two tactical airfields that were established by 1968, with more that would be established. These tactical air bases increased the ability for ground forces to be resupplied, medically evacuated, or move throughout the battlefield.

[43]Dunn, 63.

[44]Ibid.

Figure 3. Tactical Airfields

Source: Carroll H. Dunn, *Base Development in South Vietnam, 1965-1970* (Washington, DC: Department of the Army; U.S. Government Printing Office, 1972), 66

Naval and air bases set conditions for land base strategy. In 1965, the responsibility of establishing land bases was held at the theater level and many plans were developed. Assumptions used during the initial planning process led to the need to revisit base development and reassess the planning process. One of the numerous shortfalls identified in the initial planning process was the gap between what could be sustained and where that could take place in relation to the Commander's requirements. The requirements often exceeded the plan and the capability of available engineers resulting in loss of time and initiative. To mitigate this situation, the MACV Directorate of Construction was established and responsible for managing all

construction efforts in Vietnam. One of the many challenges this agency dealt with was the fact that the majority of the construction units was in the Reserve and National Guard and not activated to deploy.[45] This resulted in the DOD relying heavily on contract support to meet the shortfall.

As with most immature theaters, standards evolve as time, budgets, and priorities permit. The initial priority was to establish requirements for minimal basic operations. In 1964, General Westmoreland established the first general guidelines (Table 1). "Standards were based on three factors: the mission of the unit for which the facilities were provided, the permanency of units in a given location, and the philosophy of each military service."[46] To complicate this situation, the philosophy of each service proved to be a critical point and eventually required the involvement of the Joint Chiefs of Staff. For example, the Air Force "felt that pilots and electronic technicians lost proficiency when they were forced to live like combat troops."[47] These service biases resulted in each service requiring different contracts and different budgets.

[45]Dunn, 132.

[46]Ibid.

[47]Ibid., 134.

Table 1. Construction Standards

Facility	Temporary	Intermediate	Field
Troop housing	Austere wood buildings; 1- and 2-story barracks	Austere wood huts; tents with wood frame and floors	Austere wood huts; Class IV tents with wood frames and floors
Mess hall	Pre-engineered metal or wood building	Pre-engineered metal or wood building	Wood building; tents
Dispensary	Pre-engineered metal or wood building	Pre-engineered metal or wood building	Wood building; tents
Electricity	Central power and distribution	Nontactical generators	Nontactical generators; TOE generators
Water supply	Piped water distribution	Point supply with limited distribution	Point supply
Sewage	Waterborne	Consolidated treatment	Burn-out latrines burn-out latrines
Roads	Paved	Stabilized	Dirt

Source: Carroll H. Dunn, *Base Development in South Vietnam, 1965-1970* (Washington, DC: Department of the Army; U.S. Government Printing Office, 1972), 45.

These standards enabled the United States to deploy and operate a military force over of over 400,000 personnel (not including contractors) in an underdeveloped area.[48] By April 1969, there were twenty-seven major base camps (Figure 4). The size of these bases varied based on their location, strategy in the surrounding area, and ability to resupply. Most of these bases grew because of resource management of as well as ensuring basing strategy remained nested within the operational strategy throughout the war. Although most of the "facilities were temporary, some eventually became assets of Vietnam."[49]

[48]Hay, 173.

[49]Dunn, 134.

Installation	Cantonement Capability Based On Housing	
	Officers	EM
Phu Bai	754	5,800
Da Nang	671	4,865
Chu Lai	1,595	10,337
Pleiku	611	9,521
Camp Enari	1,023	9,223
An Khe	1,950	12,000
Qui Nhon	1,870	20,980
Tuy Hoa	1,002	6,765
Nha Trang	438	7,958
Dong Ba Thin	563	2,430
Dalat	7	579
Cam Ranh Bay	1,479	17,173
Phan Rang	220	4,487
Lai Khe	532	3,706
Phu Loi	932	5,721
Cu Chi	1,512	12,616
Bien Hoa	815	8,407
Long Binh	5,855	36,987
Black Horse (Long Giao)	307	4,537
Bearcat	972	7,615
Macv- Saigon-T.S.N	10,768	23,288
Saigon Ports	218	1,379
Long Thanh North	189	933
Vung Tau	294	8,182
Dong Tam	1,193	10,995
Vinh Long	365	2,435
Can Tho	131	1,915

Figure 4. Major Base Camps.

Source: Carroll H. Dunn, *Base Development in South Vietnam, 1965-1970* (Washington, DC: Department of the Army; U.S. Government Printing Office, 1972), 135.

In order to gain a general idea of the number of FSBs, Figure 5 shows fifty-two bases operating in I Corps north area near the city Quan Tri from 1965 to 1970. Although this map does not capture all the bases used during the war, it depicts the approximate location of some bases. Important to note is that some of these bases are indicated as “LZ,” and some are located close to others. While each base had its own unique purpose and capability, they all nested with local strategy at different periods during the war. In analyzing these base locations indicated on the map, the majority of the bases appear to be near major road networks or major waterways, and the bases located in the mountainous areas appear to utilize high ground. Finally, the bases located near the Cambodian border appear to be in a position to disrupt enemy operations in Cambodia, primarily main enemy supply routes.

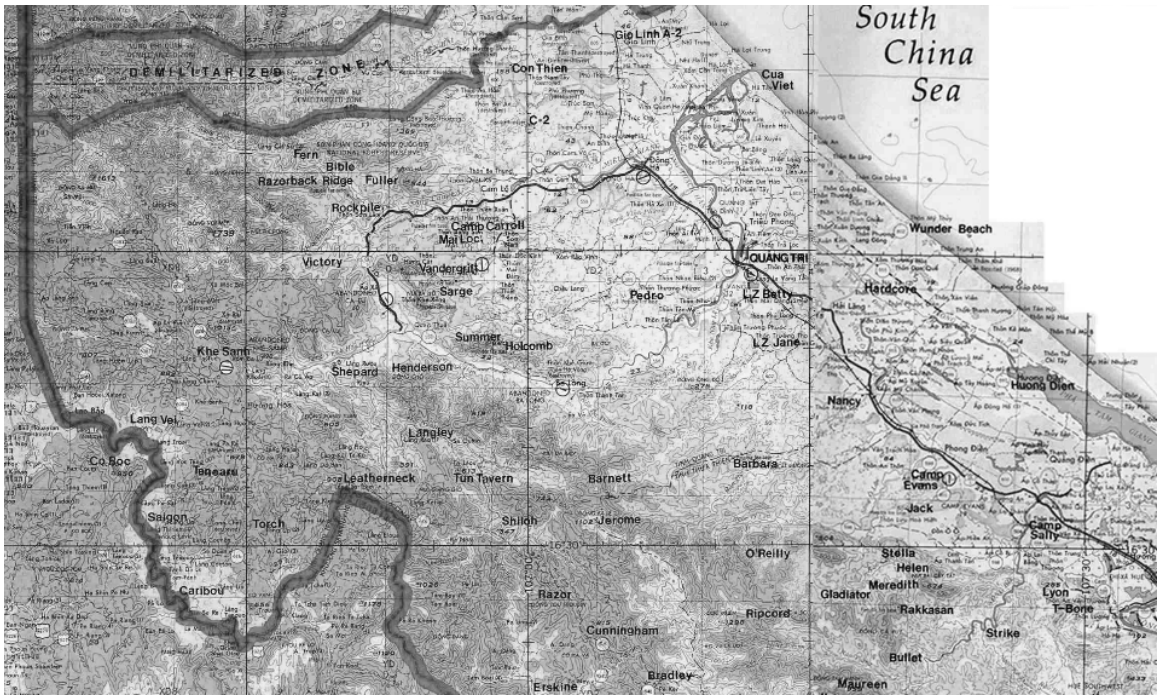

Figure 5. I Corps Quan Tri Map

Source: Unknown, LZ Sally, "I Corps Quan Tri Map," http://lzsally.com/maps/quangtrimap.jpg, (accessed 8 February 2014).

Finally, the actual number of FSBs constructed during the Vietnam War is difficult to ascertain as Michael Kelly notes that thousands of bases were built.[50] To add to the confusion, DOD records in the National Archives and Records Administration are identified by units operating in Vietnam in the form of battalion staff duty logs.[51] The decentralized utilization of FSBs was affected by local strategy, unit SOP, and terrain. Because these factors varied, there is no comprehensive database containing all the locations occupied during the Vietnam War.

The Vietnam War strategy tested the use and development of the FSB, and was closely tied with the new airmobile tactic. Forces were often located in areas that extended beyond the

[50]Kelley, xx. Kelly identifies thousands of bases, locations, and maps during the Vietnam War. Although he specifically states it is not a complete list, his list known as the most complete.

[51]Ibid., xiv.

range of artillery support, and the FSB helped to mitigate that risk. However, leaders were unsure how to use the FSB effectively or efficiently. Some leaders were concerned a FSB might "telegraph the main punch" before an operation begun.[52] Other leaders thought FSBs required too many resources, while others simply established bases wherever feasible. Because bases were typically light and mobile, leaders were able to move them whenever the area strategy changed or no longer needed. Further, as the strategy changed, the purpose of a base would change, which resulted in changing the "classification from LZs, to FBs, to FSBs, to Basecamps in concert with their changing size, available facilities or at the whims of new tenants or commanders."[53]

Another aspect adding to this confusion regarding the number of FBs is the actual names or classifications of the bases. Unit SOPs varied and when units rotated in and out of bases, they tended to rename them in accordance with their own standards. The result is that although bases remained at the same location, they may be recounted as a duplicate because of the name change. For example, "by tradition the U.S. Army's First Cavalry Division called nearly all its FBs LZs, while the 101st Airborne Division called them all FBs. This happened despite the fact that many of these facilities were otherwise identical."[54] In addition, names of FSBs were often duplicated. For example, the name Firebase A was used at a minimum of five different occasions by different units at various locations, and occasionally, at the same time. In April 1967, III Corps established Firebase A located in the Binh Long Providence while another Firebase A was located in the Bien Hoa Providence.[55] Names of FSBs were similar which caused confusion. For instance, Fire Base

[52]Coleman, 105.

[53]Kelley, xix.

[54]Ibid.

[55]Ibid., 5-181.

Brick and Fire Base Blitz were ten kilometers away from each other and were often confused because of their names.[56]

The second question is where were the bases located? Dunn asserts, "This nature of the war required a military presence everywhere and that simply meant dotting the countryside with FSBs, maneuver-element base camps, logistic support areas, heliports, and tactical airstrips."[57] Although the locations of the bases varied throughout the campaign, the strategy, LOCs, and the terrain ultimately influenced them.

The warfighting strategies used during this war can be broken into three phases that affected bases as depicted in Figure 6. Logistic bases were established during Phase I. This set the condition to extend the operational reach and provide additional flexibility while mitigating risk. In Phase II of the operation, the lines were extended deeper into the country and larger bases supported smaller temporary bases. During Phase III, bases were fortified and improved until the end of operations, at which time smaller bases closed and removed. A vital part of this strategy was the establishment of bases in and near populated areas. This allowed the military to develop relationships with the local people and enabled the establishment of trust and security in the local area while disrupting the local insurgency by losing their freedom of maneuver to operate.

During combat operations, establishing temporary basing allows for an increase in operational reach and depth. As combat units travel away from major support facilities, they need to establish a way to keep supporting their efforts by both the use of fire support capabilities and ensure basic logistic functions can remain. If necessary to establish a temporary base camp, the local Commander would have to ensure that it was properly secured which usually resulted in loss of some combat power.

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[56]Kelley, xiv.

[57]Dunn, 12.

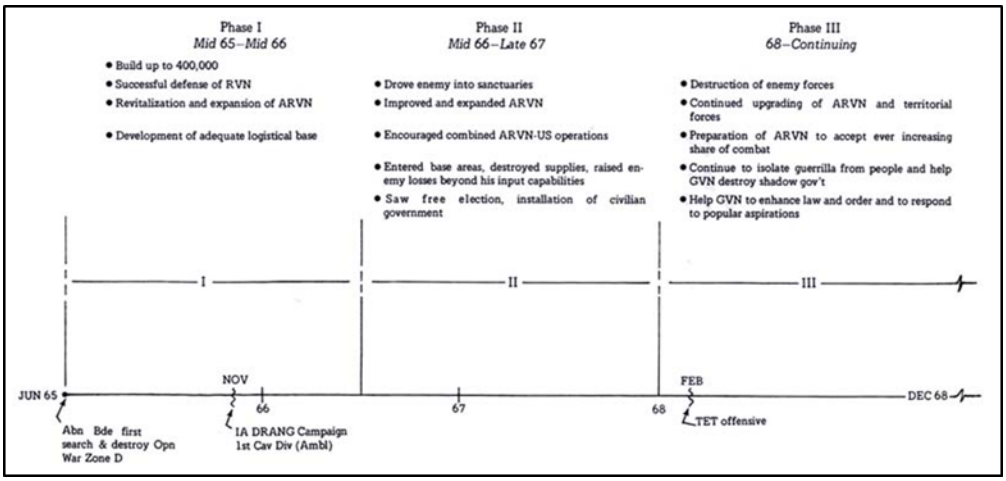

Figure 6. Three Phases of Vietnam Strategy

Source: Lieutenant General John H. Hay, Jr., *Vietnam Studies Tactical and Material Innovations*, (Washington, DC: U.S. Government Printing Office), 1974, 172.

Another factor affecting base location was the LOCs (Figure 7). Bases needed to become accessible to send and receive supplies. When bases were established near a port, watercraft and air assets could supply them. When bases were located near populated areas, an established road network was vital for accessibility. Initially, the road network in Vietnam was not sufficient for the military traffic. Few roads were asphalt, but most were dirt and unimproved.[58] Since the roads near the coast were used frequently, they were maintained accordingly. Inland roads were more difficult to maintain than those near the coastal areas. These roads suffered from sabotage and if not a priority in an operation, resources for road repair was allocated other places. Figure 7 indicates main highways running primarily north and south, linking the main cities along the way. When Figure 7 is compared to the base locations on Figure 5, the pattern of base locations is concentrated near main road networks.

[58]Dunn, 9.

Figure 7. Land Lines of Communications

Source: Carroll H. Dunn, *Base Development in South Vietnam, 1965-1970* (Washington, DC: Department of the Army; U.S. Government Printing Office, 1972), 8.

The terrain and weather influenced Vietnam FSBs. The country has five main types of terrain: delta, piedmont, highlands, coastal lowlands and plateau, each with its own special characteristics as shown in Figure 8. Tactically, different terrain meant different operations. For instance, the delta with rice paddies, swamps, canals, and streams made vehicular operations difficult increasing the importance of aircraft and watercraft for resupply. The jungle and

highlands relied heavily on light infantry tactics and ground for resupply. Logistically, these types of considerations also applied to establishing bases. Since the delta and low land areas were prone to flooding, they were only occupied only when weather supported operations. During the monsoon season, some of these bases closed, moved, or relocated. As these FSBs moved and reestablished, sometimes they kept the same name while other times they changed their name all together. Although this decentralized method of control enabled commanders to gain flexibility and reduce risk, it resulted in unintended duplicated effort and resource inefficiency.

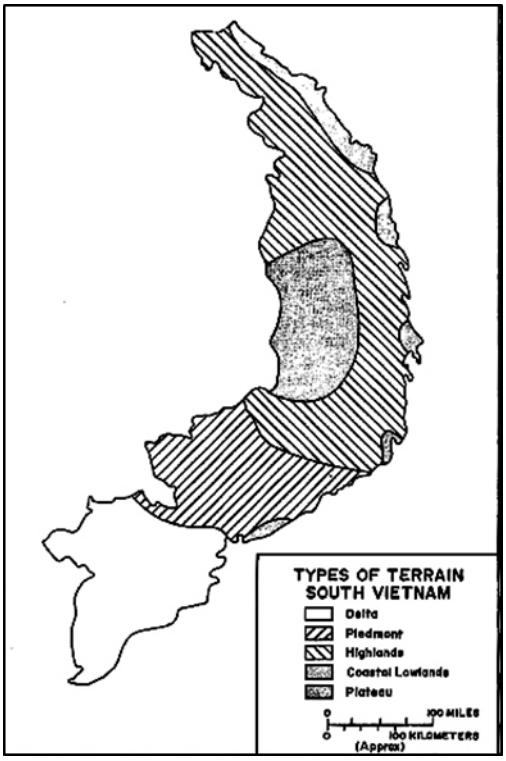

Figure 8. Vietnam Terrain

Source: Lieutenant General John H. Hay, Jr., *Vietnam Studies Tactical and Material Innovations*, (Washington, DC: U.S. Government Printing Office), 1974, 7.

Another consideration regarding the relationship between terrain and base location was how to supply it and how to get to those places. In areas of limited mobility, a heavy reliance on

air for resupply had to be factored into operations. The delta, marsh, and jungle put an increased requirement and demand on helicopters and planes. This meant the construction of LZs and runways near or inside a base perimeter. An example of a layout that accounted for this is Khe Sahn Combat Base (Figure 9).

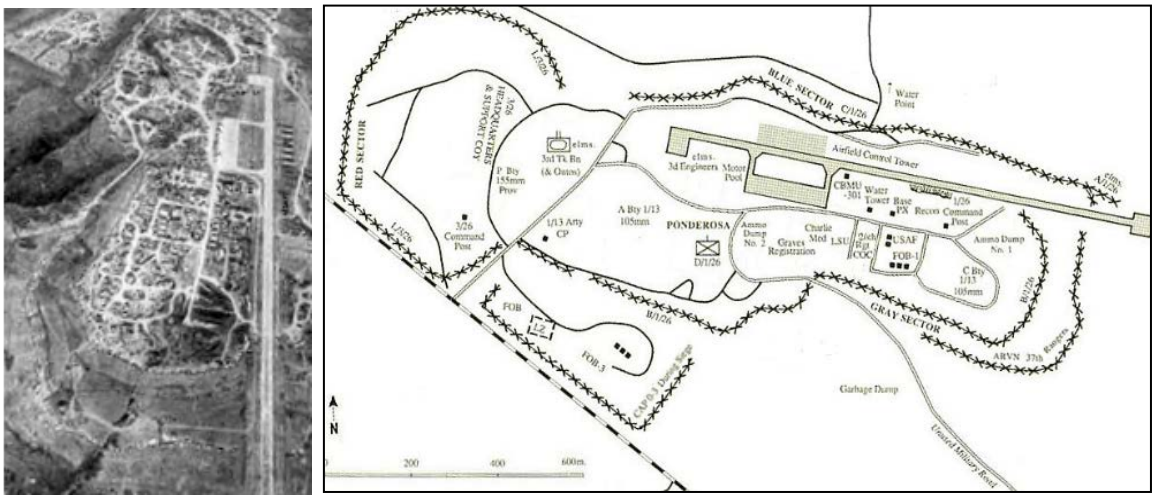

Figure 9. Khe Sahn Combat Base.

Source: "Combat Photos," Together We Served, http://marinephotos.togetherwe served.com/1157248.jpg (accessed 8 February 2014); Felix Stember, "Detail map of the Khe Sanh Combat Base during the siege," Wikipedia, http://en.wikipedia.org/wiki/File:Detail_Map_Khe_Sanh_Combat_Base.jpg (accessed 8 February 2014).

Khe Sahn Combat Base was supported by integrating multiple functions.[59] Fire support, capabilities for air, major road networks, and controlled entry points made this base exceptionally functional. Although it had an internal fire support capability, another artillery unit, located nearby on Hill Top 950 (Figure 10), was approximately three and a half kilometers away and

[59]Kelley, 5-274.

supported this base.[60] The artillery unit at Hill Top 950 also shows they occupied a location at the crest of a hilltop, which is an example of a type of strategy used in this war. This location provided a position of relative advantage utilizing the high ground, which enabled units to control a larger area, disrupting enemy operations. This disruption technique proved to be an effective strategy throughout the war.

Figure 10: FSB at Hill Top 950.

Source: "Fire Support Base Khe Sahn," http://media-cache-ak0.pinimg.com/736x/ac/50/2a/ac502a352754d1ca10adeeedbca58420.jpg (accessed 20 January 2014).

The third question is what was the primary purpose of the base? The larger bases had purposes that included logistic nerve centers and advanced command and control facilities. As a result, these bases were located near population centers and provided additional security for those cities and villages. These bases also had the responsibility to ensure the LOCs remained accessible and secure. However, smaller bases were designed for other purposes including interdiction, disrupting enemy operations, and enabling commanders to extend operations reach and flexibility.

[60]Kelley, 5-237.

FSBs were established in areas to support maneuver and the newly formed aviation units. These bases allowed commanders to operate under an umbrella of fire support capability that helped mitigate risk associated with combat operations. Although TTPs were being developed regarding the importance of FSBs in aviation operations, they soon became an integral part of their operations. 1st Cavalry Division utilized these TTPs as they established FSBs to support movements of nineteen units moving 325 kilometers in two days.[61] This technique helped mitigate risk to those forces by providing a fire support umbrella and increased options to the leaders.

Although the first Army aviation units arrived in Vietnam in 1961, the use of the aircraft warfare was still untested in many areas. In 1962, McNamara sent the Secretary of the Army a memorandum directing him to "explore opportunities offered by technology to break traditional ties to surface mobility" and "reexamine aviation requirements with a bold new look at land warfare mobility."[62] Later that same year, one of the major recommendations by the Army was the "creation and testing of three baseline airmobile organizations; an air assault division, an air transport brigade, and an air cavalry brigade."[63] The task organization of the air assault division consisted of organic artillery that could support their operations and be transported by helicopters. Although this concept was still in the development and testing stage, the strategy of airmobile warfare immediately generated the ability to increase the operational and tactical reach of military units.

This change in warfare tactics and strategy led to the development and creation of mobile offensive and defensive capabilities and the need for a FB. "The 1st Cavalry pioneered the concept of the artillery fire base . . . assault battalions seized an area that could be used by

[61]Coleman, 153-154.

[62]Ibid., 6.

[63]Ibid., 7.

artillery and give further support to nearby infantry units."[64] As with any new developing tactic, it would go through many changes. The creation of small FSBs grew in both in size and resources to sustain it. The Commander had to manage the size and purpose of each FSB to ensure that the size remained manageable and able to support operations in and around the base. Each base needed logistical support and most importantly, security. The security of the FBs had to originate from somewhere and usually came from the combat power of the Commander that established it. Another method to help manage their risk was to exploit their mobile capability, and as a result, FSBs moved regularly. Because of frequent moves, a company or less of infantry usually completed the security detail of FBs, and typically, the maneuver battalion headquarters would be located with the artillery battery.[65]

Other reasons for building bases included offensive fire support facilities, used for enemy decoys, and as a Fire Support Surveillance Base (FSSB). Initially, FSBs bases were temporary facilities built specifically to deliver field artillery support to maneuver units though their task and purpose changed throughout the war. In the early days of this concept, the FSBs were vulnerable to attack because they were lightly fortified and relied on their mobile capability; as a result, they quickly became high payoff targets for enemy offensive actions. "Eventually, because of the enemy's desire to attack these installations, FSBs were established for the primary purpose of a decoy or to lure the enemy into an engagement on U.S. terms. To mitigate this threat, target detection means including radar, sensor devices, and infrared light sighting devices were employed to give warning of the enemy's approach."[66] When FSBs were built efficiently, they enabled friendly forces to attain a position of relative advantage. The bases provided protection, resulting in lower risk of friendly forces that resulted larger numbers of enemy casualties.

[64]Coleman, 104.

[65]Ibid., 105.

[66]Hay, 97.

Figure 11 is an example of an offensive FSB established in 1969. FSB Crook was established to disrupt enemy movement and to support offensive operations nearby.[67] It was located near the Cambodian border and a major LOC between Vietnam and Cambodia. The picture of the base depicts the location in a relatively open area that had clear fields of fire. To capitalize on the available technology, integrating radar and seismic sensors proved to be a powerful technique.[68] FSB Crook's disruption to enemy freedom of maneuver resulted in an attack on the base on 5 June 1969 that resulted in a total disaster for the enemy.[69] The sensors, coordinated artillery, and mortar fire integrated throughout their defensive plan defeated the enemy's attack.

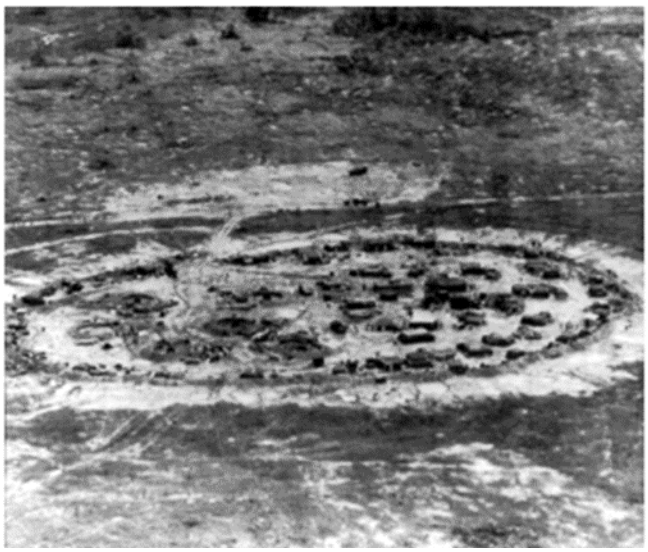

Figure 11. FSB Crook

Source: Lieutenant General John H. Hay, Jr., *Vietnam Studies Tactical and Material Innovations,* (Washington, DC: U.S. Government Printing Office), 1974, 98.

[67]Hay, 98.

[68]Ibid., 99.

[69]Ibid.

The fire support interdiction base was another tactic involving integrated technology throughout a base. An illustration of this concept is Figure 12, 173d Airborne Brigade's Fire Support Surveillance Base Floyd. Located in an area able to cover a valley floor, FSSB Floyd integrated sensors, radars, and other target acquisition means with the system of direct and indirect fire support.[70] Although FSSB Floyd's main weapon system focused around mortar capabilities, it demonstrated the importance of integrating systems throughout the base and resulted in quick and accurate targeting for base defense.

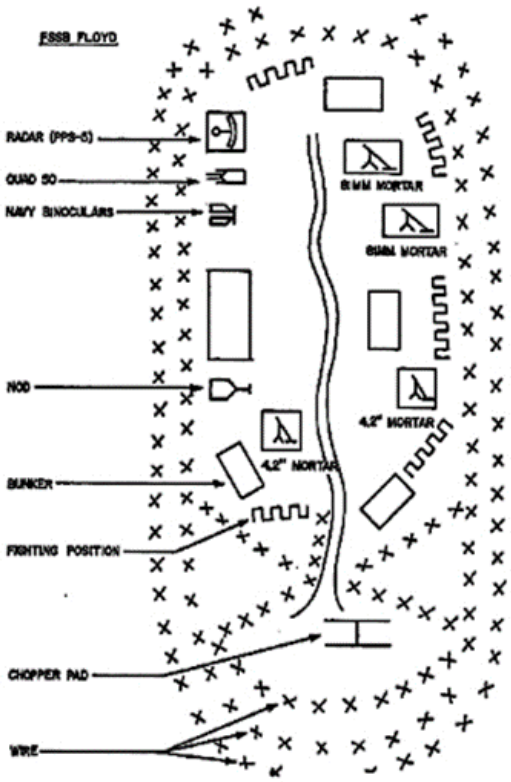

Figure 12. FSSB Floyd

Source: Lieutenant General John H. Hay, Jr., *Vietnam Studies Tactical and Material Innovations*, (Washington, DC: U.S. Government Printing Office), 1974, 102.

[70]Hay, 101.

The fourth question is what variables were considered when deciding base locations? These variables are primarily based around LOCs, environmental considerations and strategy. All bases, regardless of their purpose, must have a way to be supplied and supported. Weather affected air operations and reliability. Aircraft also dealt with weight restrictions that resulted in the importance of setting priorities. Some road networks were not reliable because of deterioration from sabotage, lack of maintenance and heavy usage.[71] Figure 7 indicates the road network as it was in 1954 and they were in relatively the same condition when the U.S. forces arrived. For sustained military operations, most of the roads had to be upgraded, maintained, and secured to be reliable.

The environmental considerations weighed heavily on selecting base locations. Combat power could be decimated simply from the results of poor hygiene. "Military planning had to consider provisions for fresh water, and countering the problems of insect-transmitted diseases like malaria, dengue, and encephalitis. Cholera, hepatitis, and typhoid were common in the countryside because of a lack of trained medical personnel, adequate medical facilities, and proper sanitation."[72] Although basing enabled medical facilities to be forward deployed, combat medics, or those assigned to the front line units were often unable to compete with Mother Nature. "History reflected that the French Union troops were affected by epidemics of schistosomiasis and leptospirosis-parasitic infections of the intestines and bladder-between 1950 and 1954, and a full 25 percent of the personnel operating in the delta region were finally debilitated."[73] Although the primary lesson from this example centered on education and prevention if not addressed properly it would result in loss of combat power and often did.

[71]Dunn, 12.

[72]Dunn, 11.

[73]Ibid.

The primary purpose of a FB was determined by strategy, in addition to, where and how it was employed. Again, based on unit SOPs, each base was unique. Although, most shared a generally circular design built to conform to the immediate terrain, like FSB Gala in Figure 13, each one had a specific purpose. This base looks like a deputy's five-pointed star lying on the ground with a wreath of three strands of concertina wire around it. This base centered on its artillery. While some bases had artillery, others had mortars or focused on surveillance. The strategy dictated if the bases were located near a village, or in a remote area of the country. Strategy typically accounted for the most likely engagement areas to ensure that friendly forces would have the necessary capability to respond to attacks.

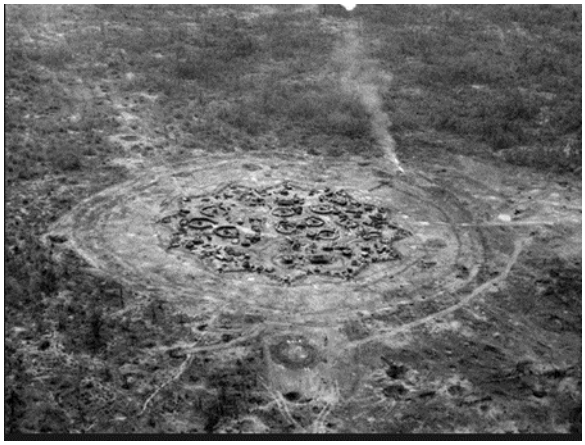

Figure 13. FSB Gala.

Source: Unknown, "*Forward Support Base Gala*," Veterans Community Education Partnership for West Volusia, Inc., http://vcepinc.org/FSBGALA.jpg (accessed 20 January 2014).

The fifth question is, were major combat operations located near bases? Major combat operations occurred near bases numerous times. For instance, the Battle of Khe Sahn occurred on January 21, 1968 near the Khe Sanh Combat Base (Figure 8). This heavily fortified base was attacked in 1967 because of its importance and location. This combat base had an interdiction purpose and disrupted enemy movement and other activities. Located a few miles from the border

of North Vietnam and Laos, this base was designed to carry out reconnaissance attacks on the Ho Chi Minh trail and enemy supply lines from the north.[74] The NVA attacked the base with rocket, artillery, small arms, and other automatic weapons fire attacked the base. The result of the assault was the destruction of the base ammunition stock and fuel supplies. The NVA continued attacks and occupation of nearby hilltops. Marines conducted counter attacks and active patrolling in the surrounding hills with the support of artillery fire for several days. During this time, the combat base was resupplied almost entirely by air because the enemy disrupted the land LOCs. Their last major assault on the base occurred 29 February 1968.[75] The enemy began withdrawing from the area soon after the unsuccessful attack because the Marines were able to successfully disrupt enemy operations with their ability to concentrate fires. This significant action revealed the importance of establishing redundant supply routes and integrating fire support throughout the surrounding area.

Another major engagement in the remote part of the jungle was the battle of Hamburger Hill occurring in the jungle-mountains along the Laotian border of South Vietnam in May 1969.[76] Fought in the jungle of the mountainous Shau Valley, it was an attempt to seize a heavily fortified NVA base camp.[77] Narrow approach routes influenced by heavy vegetation, restricted U.S. maneuver forces, and resulted in platoons and squads attacking on small fronts. [78] Because of the choke points created, the NVA was able to concentrate their forces and disrupt attacks. At this

[74]Department of Defense, "The Battle of Khe Sanh" (circa 1968), YouTube, http://www.youtube.com/watch?v=Q-m96RoxwrI (accessed 18 January 2014).

[75]PBS, "Battlefield: Vietnam; The Siege at Khe Sanh," Battlefield Vietnam Web Site, Adobe Shockwave Player file, http://www.pbs.org/battlefieldvietnam/khe/index.html (accessed 18 January 2014).

[76]PBS, "Vietnam: Draw Down – Hamburger Hill," Wisconsin Public Television, http://video.wpt.org/video/1500485810/ (accessed 20 January 2014).

[77]Kennedy Hickman, "Vietnam War: Battle of Hamburger Hill," Military History, http://militaryhistory.about.com/od/vietnamwar/p/hamburgerhill.htm (accessed 20 January, 2014).

[78]Vietnam War Facts and Figures, "Major Battles of the Vietnam War," http://namfacts.tripod.com/id3.html (accessed 31 January 2014).

point of attack, American squads and platoons frequently faced NVA platoons and companies.[79] To overcome this enemy advantage, the infantry responded with artillery and close air support that ultimately influenced the outcome of the battle. FSB Berchtesgaden (Hill 1030), was one of a few FSBs established to support this attack.[80] It was located on the eastern edge of the A Shau valley and provided fire support. Located at the crest of the hill, this location enabled the artillery to dominate the surrounding area. This is another example of establishing a remote FSB that extended operational reach, mitigated risk, and increased flexibility for the ground commander.

This section examined five questions regarding FSBs in the Vietnam War. During War, the FSB was an innovation that proved its importance in increasing operational reach and flexibility while decreasing risk to the forces. This change in tactics resulted in numerous FSBs built around tactical and operational strategies that produced a number of bases built in proximity and possibly overlapped fires coverage. In the section that follows, an analysis of the data that answered each question will show just how influential the FSB was in the Vietnam War and has become to military operations around the world.

Findings and Analysis

As explained throughout this monograph, FSBs are complex systems that are combat multipliers when utilized correctly. Simply stated, base strategy can alter the outcome of an engagement. They provide a means to increase operational reach, provide additional security and protection to local maneuver units, and reduce operational risk. Additionally, basing may increase strategic options depending on the missions associated with a specific base. Given this fact, FSBs must be properly managed in order to provide the local commander maximum flexibility while

[79]Ibid.

[80]Kelley, 5-51.

reducing associated mission risk. In the preceding pages, this study focused identifying key factors associated with Vietnam fire base locations and purposes while having positive effects regarding risk and flexibility. Analysis revealed that FSBs absolutely influenced operations throughout the war. In a resource-limited environment, FSBs must be optimized through active management at multiple levels.

Thousands of bases were established during the Vietnam War and served several purposes. The initial bases had logistical purposes. These were hubs for the vast majority of supplies needed to build other bases, sustain the force and served as a significant foothold in the distant nation. Once established each service was able to further expand their roles in the country. This extended the operational reach of the U.S. military and significantly increased the options for the local commanders. Once the logistic footprint was established then other bases could be built to further extend the reach and flexibility in accordance with the strategy. Each base built extended support, increased protection, and enabled the U.S. military to be effective in remote areas.

The location of these bases was vital. Based on the strategy and the terrain, bases increased operational reach. A base in or near a population center could disrupt enemy activity and help to foster long-term relationships with the local people. A FSB on a crest of hill could command the surrounding area and help to mitigate risk to operating forces. A temporary FSB could influence a battle and make the difference between victory and defeat. An improved permanent base could be given to the host country as a strategic asset at the end of a campaign.

The purpose of each base should nest with the theater strategy. As seen during the Vietnam War, bases near a populated area not only served to protect the local people, but also disrupted enemy operations, increased intelligence opportunities, and made it possible to build relationships with people. Bases established in remote areas served to extend military operational reach. In inclement weather, aircraft could not fly to provide close air support to maneuver forces.

During times like this, artillery proved to be an effective all-weather system able to operate any time needed.

Variables affecting the location for each base were unique to each one established. Again, strategy influenced the purpose of each base but every unit had their own ideas and SOPs. Most of the early bases served logistic functions, whereas most of the later bases served a distinct combat support function. Terrain was a significant influence because each base needed a LOC that was reliable. Bases located in wetlands operated differently than those in remote jungle areas. Finally, each base had different environmental considerations. The military planner had to consider all of these factors when deciding on where to spend resources.

A significant lesson learned during the Vietnam War was that the security of each base had to be taken seriously. Integrating technology as the base was established increased the survivability and protection factor and fire support systems that were part of the base plan proved enabled effective operations near the base. When combat operations occurred near bases, like Khe Sahn, the base was not only able to defend against enemy attacks but able to support search and destroy operations to disrupt further enemy activity. Again, these actions increased options for local commanders, enabling them to have increased flexibility while reducing risk to forces.

The hypothesis addressed earlier in this study states that if terrain, maneuver, or logistics influences FSBs, then risk will increase, and flexibility will decrease. Conversely, if fire capabilities influence FSBs, then both risk and flexibility decreases. This study asserts that risk and flexibility are critical factors to consider when developing operational plans and FSBs can affect those factors (Table 2). The maneuver commander's operational approach will differ based on circumstances, and effective use of FSBs will provide them with increased flexibility. FSBs should be considered throughout the overall plan. Bases management at multiple levels is required to minimize duplication of capabilities unless it is necessary. These factors influence how a maneuver operates in and around protected areas and identify dead space associated with

the associated terrain. The analysis conducted in this monograph supports the hypothesis that FSBs absolutely affect risk and flexibility.

Conclusion

The premise of this study is that the United States military historically builds FSBs in foreign areas in order to generate depth and operational reach. This is a correct statement; however, there are many factors to consider when building FSBs. The most common considerations include terrain, maneuver or logistic requirements and most importantly overall campaign strategy. Part of the strategy must include the level of involvement of the host nation forces and the projected involvement of the population near any base built. Vietnam showed how effective FSBs were when used in conjunction with overall campaign strategy. The results affected depth, flexibility, and risk.

The first hypothesis of this monograph was if terrain, maneuver, or logistics influences FSB locations then risk will increase, and flexibility will decrease. The evidence suggests that this hypothesis is supported. Many times during the war, locations of the FSB were determined based on an operation, not necessarily based on the overall strategy. Maneuver forces conducted operations around areas they could get fire support if needed. Once the operation was complete then the base was deconstructed and moved to another location. The issue with this method is that if maneuver forces operated in areas without fire support coverage then risk to their forces would increase.

The second hypothesis of this study was if fires capabilities influence FSB locations then both risk and flexibility decrease. The evidence suggests that this hypothesis is supported. If the main factor in determining where a FSB is located is the capability of a weapon system, the maneuver forces will be restricted to operate under that umbrella. Although this may mitigate risk to the forces, it will also decrease the amount of flexibility available to that commander. The

maneuver commander may have to modify their strategy or accept increased risk and operate beyond the fires coverage area.

Implications

The implication of this monograph is that it highlights how innovations influence operational strategy. As TTPs, matured throughout the Vietnam War, the importance of the FSB base materialized. This capability absolutely increased the ability to achieve depth and flexibility while reducing risk. Although this study primarily focused on the genesis and importance of FSBs, other innovations also surfaced during the Vietnam War. For instance, Air Assault techniques evolved throughout the operational phase of the war this changed warfare. Leaders had to adapt to the operational environment and recognize opportunities to employ them. They had to be willing to leverage new tactics, new capabilities, and new technologies and integrate them into the operational approach. When the mission was over, conduct a quick after action review to see if any improvements could be made. This method was used with the first few FSBs and each time one was established it was a little better and more efficient.

Another implication of this study highlights the importance of actively managing FSBs. More often than not, the FSBs used in Vietnam War were managed with a decentralized method. Although this method gave commanders maximum flexibility at the lowest levels, this method resulted in duplicated capabilities and a waste in material and labor. Each construction of a FSB required time, effort, and material resources. In a resource-limited environment, this has second and third order effects. In order to reduce this waste, FSBs must be actively managed at multiple levels. This may result in less flexibility at the lower levels but increased flexibility at higher levels.

Future Research

Although this monograph focused on some factors that influenced the locations of FSBs during Vietnam, it is necessary to realize that fire support capabilities changed throughout that war which resulted in how FSBs were utilized. Recent tactics used in Iraq and Afghanistan were based on some of these very same ideas with the main difference that most of these bases were static and not mobile. Although some TTPs remain the same, capabilities have changed significantly. Changes in weapon platforms, surveillance systems, and communication systems all have an influence on the location of bases. Leaders should continue to use lessons of the past in conjunction with current capabilities and strategies. This results in optimal use of resources, capabilities, depth, and flexibility all while mitigating risk to operational forces.

In the current environment, resources remain critical to strategy and operations. Resources involving personnel, budget and material will continue to affect policy, as well as, operations at all levels. Although this phenomenon is not new, it continues to apply today. Active FOB management remains an integral part of the strategy affect success at multiple levels.

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