



SCHOOL OF ADVANCED AIRPOWER STUDIES

**THE RULES OF DEFEAT:
THE IMPACT OF AERIAL RULES OF ENGAGEMENT ON
USAF OPERATIONS IN NORTH VIETNAM, 1965-1968**

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ON USAF OPERATIONS IN NORTH VIETNAM, 1965-1968

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ABSTRACT

During the Vietnam War, many American air commanders were convinced that rigid Rules of Engagement (ROEs) prevented an American aerial victory over North Vietnam during the Rolling Thunder air campaign from 1965-1968. ROEs were directives issued by civilian authority to guide the conduct of all US aerial operations in Southeast Asia. To the men "in the field" these rules provided detailed guidance to be followed by all commanders, air planners, control personnel, and combat crew members in the actual planning and flying of combat missions. ROEs allowed President Lyndon Johnson to apply measured amounts of air power both to avoid escalation of the war into World War III and to preserve domestic social programs. The belief among airmen that ROEs undermined Rolling Thunder was later strengthened by the 1972 Linebacker II air campaign and the more recent Desert storm air war. Both air campaigns were seemingly decisive, had few restrictive ROEs, and were conducted in a "straightforward" manner compared to the gradual approach of Rolling Thunder. A detailed examination of the ROEs from 1965-1968 reveals that they made the conduct of the air campaign terribly inefficient and also hampered its effectiveness; however, ROEs were not the sole cause of Rolling Thunder's failure.

This paper examines how these rules affected the effective military execution of the Rolling Thunder air campaign, as well as their impact on American aircrews and the enemy. ROEs violated United States Air Force doctrine and stood in stark contrast to accepted "principles of war." As a result, many vital military targets were either not bombed or were attacked in a very limited and piecemeal fashion. ROEs became so complicated and changed so often that aircrews found it difficult to know what the rules were from day to day. The rules

forced aircrews to fly and fight in a manner contrary to training and doctrine. The rules also helped to create a rift between military and civilian leaders, and made what would have been very difficult missions under the best of circumstances a true nightmare. The ROEs further became a weapon for the enemy to use against America, allowing him time to prepare for air attacks and to develop a deadly air defense system, time to recover from much of the bombing damage, and sanctuaries free from air attacks which allowed the continued flow of imported war materials. The rules guaranteed one thing: the loss of many American men and aircraft. Few nations, if any, can hope to defeat the United States in conventional warfare. But in all probability, future wars will most likely be fought for limited objectives similar to those sought in Vietnam and in the Persian Gulf. These wars will likely be fought with fewer dollars, fewer aircraft, and fewer personnel than before. The United States cannot afford ROEs which act as a "Force Divider" instead of a "Force Multiplier." In future air campaigns, ROEs may very well be that key factor that determines victory or defeat.

BIOGRAPHY

Major Ricky J. Drake (BS, USAF Academy; MS, Troy State University) is an F-4E weapons systems officer. A recent graduate of the inaugural class of the School of Advanced Airpower Studies, he was just assigned to the Plans Directorate at Headquarters Air Combat Command, Langley AFB, Virginia. Also a graduate of Air Command and Staff College, his previous assignment was F-4E WSO Chief of Scheduling and Training at Eglin AFB, Florida. Previous assignments included an ASTRA tour at the Pentagon, and F-4Es at Moody AFB, Georgia, Hahn AB, Germany, and Taegu AB, Korea.

CHAPTER 1: INTRODUCTION

During the recent Gulf War, America and its allies executed one of the shortest and most successful air campaigns in history. From the comfort of their homes, Americans watched as fighters flew attack missions into the heart of Iraq. They witnessed the devastation of bridges, command posts, and other vital military targets within the city limits of Baghdad. These attacks were continuous, occurring throughout the day and night. In 1965, American air commanders had expected such a display of air power during the Rolling Thunder air campaign against North Vietnam (NVN). For over a year, US fighters could not bomb military targets in the key cities of Hanoi and Haiphong, which contained essential transportation links, the bulk of North Vietnam's oil storage facilities, and many other vital military targets. Even when these areas were open to attacks, air strikes remained limited, piecemeal, and spasmodic. Three years later, the dismal results of Rolling Thunder angered many American air commanders and many focused their anger on the political controls placed on the air campaign.

Against both Iraq and North Vietnam, the United States (US) possessed superior numbers and a more powerful air force, but government-imposed "Rules of Engagement" (ROEs) caused the two air wars to be executed very differently. Air commanders in Desert storm had few political restrictions placed on their conduct of the air war, unlike their predecessors in Southeast Asia (SEA). In Vietnam, the ROEs stemmed from President Lyndon B. Johnson's desire to ensure the Vietnam War did not expand into World War III. They consisted of numerous restrictions on the use of American air power, including limits on where aircraft could fly, what targets they could attack, and when they could do so. President Johnson (LBJ) believed the ROEs would permit him to apply precisely measured amounts of air power to destroy North

Vietnam's ability to support the Viet Cong (VC). But, America's self-imposed, overly restrictive ROEs violated United States Air Force doctrine and greatly hindered the effective military execution of the Rolling Thunder air campaign. Many Americans, especially air commanders and aircrews, believed that the United States could have been victorious in Vietnam if not for the restrictive ROEs. Evidence is not available to prove or deny this assertion conclusively, but evidence is available to prove just how devastating overly restrictive ROEs can be to any air campaign. American failures in Vietnam and in Rolling Thunder were not caused solely by restrictive ROEs. Yet in future air campaigns, as in this David and Goliath struggle, overly restrictive ROEs could become the decisive stone which kills any hope of an American aerial victory. Why examine Rolling Thunder's ROEs? First, Rolling Thunder was the longest, most controversial, and most restrictive air war in American history. The mention of air power and ROEs in Vietnam still invokes anger and resentment in many Americans, particularly those pilots who flew the missions. Secondly, since World War II, the United States has avoided a total war. During that same period, the Vietnam War and hundreds of other "limited" conflicts were fought throughout the world. In all probability, America's future wars will also be limited, and American leaders may share many of the same concerns that led to the restrictive ROEs encountered in Vietnam. This study of Rolling Thunder will shed light on the nature of the ROEs guiding the air war against North Vietnam; the intent of the men responsible for them; and their impact on United States Air Force doctrine, the Air Force at large, mission effectiveness, and the enemy. The lessons of this campaign may lead to the development of ROEs which enhance, rather than hinder, the conduct of future air campaigns.

CHAPTER 2: BACKGROUND INFORMATION

Direct United States Air Force involvement in Vietnam first occurred in 1954 with airlift operations aiding the French at Dien Bien Phu. After French defeat and the partition of the country, the United States pledged increased support to South Vietnam (SVN). By late 1963, the deterioration of the South Vietnamese government led to the deployment of 17,000 US military advisors to SVN. These advisors could provide support to the South Vietnamese armed forces, but were not allowed to conduct combat missions. The United States maintained this "official" position until December 1963, although American aircrews flew covert strike missions disguised as training missions in operation Farm Gate and defoliation missions in operation Ranch Hand. Coup attempts in 1963 and 1964 led to more internal turmoil and political instability. The influx of North Vietnamese men and war materials into SVN created a very dangerous situation. Attacks by the Viet cong increased. The leaders of North Vietnam seemed determined to bring South Vietnam under their control, but America was equally determined to fight the spread of communism and support the government of South Vietnam. The Tonkin Gulf incident, in early August 1964, caused a sizeable deployment of US aircraft to Southeast Asia. Further attacks on American personnel and facilities led President Johnson to believe that stronger military action, other than retaliatory air strikes, was required in Vietnam.¹

By 2 March 1965, American leaders had determined that a sustained bombing campaign was needed to correct the deteriorating conditions in South Vietnam. The campaign was spurred by South Vietnamese government's threatened collapse and its ineffective military efforts against the Viet Cong.²

Secretary of Defense Robert S. McNamara stated the following three objectives to guide

the bombing of North Vietnam: raising the morale of south Vietnamese, reducing the flow and increasing the cost of sending men and materials from North Vietnam to South Vietnam, and making it clear to the leaders of NVN that they would pay a high price for continuing their action.³ These objectives were limited, and indistinct. In the spring of 1964, the Joint Chiefs of Staff (JCS) had prepared plans for an intense aerial campaign to destroy ninety-four of the most important targets in North Vietnam. They intended this destruction to bring NVN's leaders to the negotiating table, and force them to cease their support and direction of the insurgencies in Southeast Asia.⁴ Restrictive ROEs, however, would prevent American air commanders from ever conducting this intensive air campaign. American political leaders used these ROEs to keep air power firmly "in check with the campaign's limited objectives. ROEs became united States national policy translated to the battlefield; changes in these rules illustrated the continuing validity of the Clausewitzian maxim that "war is an extension of policy."⁵

From 2 March 1965 -1 November 1968, Rolling Thunder was conducted as a limited interdiction campaign aimed at delaying, destroying, or interrupting the flow of men and war materials from North Vietnam into South Vietnam. ROEs guided this employment of air power, as they did the conduct of all US aerial operations in SEA. To the men "in the field," they provided detailed guidance to be followed by all commanders, air planners, control personnel, and combat crew members in the actual planning and flying of combat missions.⁶ The rules covered everything from fighting MIGs (Soviet built fighter aircraft) over Hanoi to fighting and dropping ordnance on enemy troops in South Vietnam.⁷ In fact, current Joint Chiefs of Staff Publication 1-02 defined these rules as directives issued by competent authority which delineate the circumstances and limitations under which its air forces would initiate and continue combat engagement with enemy forces.⁸ These rules were tremendously restrictive and caused pilots to

assume a defensive posture; lower echelon commanders could make these rules more restrictive in response to special situations and conditions, but could never remove the restrictions on their own.⁹ The rules profoundly affected the conduct of the air war and made it virtually impossible to conduct a campaign according to the principles of Air Force bombing doctrine.

ROEs were complex and ever-changing during the Rolling Thunder air campaign, but their overly defensive and restrictive nature remained constant throughout. Two categories of rules controlled the employment of air power over North Vietnam. The first category consisted of geographical limits, such as territorial seas and airspace where these rules applied. They also defined conditions under which certain forces, acts, aircraft, and vessels would be declared hostile and become eligible for air attacks. The rules further identified what enemy forces could be attacked by US aircraft and under what conditions. Finally, the rules described the degree of force American pilots could use in pursuing hostile enemy forces and in providing for their own self defense.¹⁰

The second category was Operating Restrictions. These rules appeared in the Commander-in-Chief, Pacific Command (CINCPAC) Basic Operational Order. The Basic Operational Order contained directives issued by CINCPAC to subordinate commanders for the purpose of effecting the coordinated execution of Rolling Thunder.¹¹ The "frag," an abbreviated form of the operational order, was issued to the aircrews on a day-to-day basis.¹² It listed targets totally or partially prohibited from attack and the time periods those attacks were prohibited. These "off-limits" targets included: MIG airfields, locks, dams, surface-to-air-missiles (SAM) sites, power plants, fishing boats, houseboats, naval craft in certain areas, targets within thirty miles of the Chinese Communist (Chicom) border, the thirty-mile restricted area around Hanoi, and the ten-mile restricted area around Haiphong. In addition, Hanoi and Haiphong had

respective ten-mile and four-mile rings around the city centers that were designated prohibited areas.¹³

Conditions under which specific targets could be struck during Rolling Thunder varied. Attacks on populated areas, locks, dams, houseboats, fishing boats, and targets in the prohibited areas were not allowed. Every effort was made to prevent harm to North Vietnamese civilians, foreign personnel (including Soviet and Chinese advisors), and foreign shipping. This requirement greatly limited the use of certain weapons like B-52s and napalm. Although aircraft could fly over restricted areas, they could not attack targets in them until 1966, and then only when the targets were mentioned in the operation orders. Fighters could not overfly prohibited areas, and no attacks occurred in them without special approval from the white House. Initially, pilots could attack SAM sites only if the missile sites fired first and threatened US aircraft; they were not allowed to attack non-operational sites or sites under construction. Later in 1966, "Iron Hand" missions were flown to destroy the SAMs. Attacks on MIG airfields in the restricted areas were not allowed until 1967. US aircraft could attack NVN marked ships located within three miles of the North Vietnamese coast if they fired first.¹⁴ The restrictive nature of the ROEs severely limited the initiative of air commanders and pilots. In many cases, American pilots could only react to enemy actions. For example, until early 1967, American aircrews seeking to battle MIGs had to stalk MIG airfields and wait until those aircraft took off and attacked first.

In addition to the general ROEs for Rolling Thunder, ROEs also guided other air campaigns, the different types of missions flown, and the specific location of missions. Air Force Chief of Staff General John D. Ryan acknowledged that there were all kinds of ROEs in SEA: there were rules for Barrel Roll, Yankee Team, counter air missions, close air support missions, Laos, South Vietnam, and many others. Aircrews would find it difficult to keep up with what

they were allowed to do and what they were not allowed to do; they had problems simply knowing when they were operating within the boundaries of the ROEs. Just for Laos alone, General Ryan believed aircrews needed a five-page flip chart to really know what all the rules were.¹⁵ It was hard for pilots to know from day to day what the rules were. The complicated, constantly changing rules taxed aircrews, and made what would have been very difficult missions under the best of circumstances a true nightmare.

Why were such complicated rules allowed to dominate the employment of air power during Rolling Thunder? In 1965, Rolling Thunder was simultaneously a limited interdiction campaign, a punitive expedition, and a test of will to avoid widening the war beyond the two Vietnams.¹⁶ As such, it was part of America's stand to contain the spread of communism without allowing the Vietnam conflict to escalate into world War III. Escalation into a nuclear war was viewed as suicidal; all participating nations would be destroyed. In particular, Chinese intervention in the Korean War heightened President Lyndon Johnson's fear of Chinese and Soviet intervention in Vietnam. Restrictive ROEs became the tools to prevent communist superpower intervention in Vietnam while hopefully allowing the application of sufficient military force to arrest NVN's support and direction of the insurgency in South Vietnam. These rules dominated the air war and allowed civilian decision-makers in Washington to control it. President Johnson demanded this control, and stated that "the US Air Force cannot even bomb an outhouse without my approval."¹⁷ The President believed national security goals far outweighed the objections of Rolling Thunder airmen; the potential consequences of an overly intensive air war were, he felt, too grave to be left to the judgment of military commanders.

President Johnson had personal reasons for controlling air power over North Vietnam. Through his control of the air war and his Great Society Program, "President Johnson was

determined to be a leader of war and a leader of peace."¹⁸ He wanted a military victory in Vietnam, but he also wanted to transform and improve the United States. His Great Society would initiate social and economic reforms to better all Americans. He did not want Vietnam competing for available funds, nor for the attention of the American public. By keeping the war short and from escalating, the President believed America could afford both. Thus, he waged a restrictive air campaign accordingly:

LBJ was committed to a program of guns and butter without raising taxes or mobilizing the economy and the reserves; to him, Rolling Thunder was not a military campaign but an economical way to impose an awkward inconvenience; he would not allow "that bitch of a war" to drain money from the woman he loved, the Great Society.¹⁹

ROEs allowed President Johnson to control the application of air power and war expenditures while simultaneously attempting to preserve his Great Society Program.

Public opinion has had a tremendous impact on the conduct of many military operations, and Vietnam was no exception. Vietnam became the first "media war" where people could watch the war daily from the comfort of their homes. At the time, many Americans believed the US had the air power to devastate North Vietnam, but lacked the will to use it. The Tonkin Gulf Resolution had provided American public support for virtually any action President Johnson deemed appropriate or necessary,²⁰ but LBJ knew there was a limit to the amount of bombing the American public and the rest of the world would tolerate with the restrictive ROEs, the President hoped to avoid the image of the world's greatest superpower pounding a small and defenseless third world nation into submission. Moreover, he feared massive American escalation would provoke Hanoi's allies as well as American doves. In 1966, these fears forced LBJ to ask sarcastically how long it would take five hundred thousand angry Americans to climb that white House wall and lynch the President if Hanoi and Haiphong were bombed and blockaded.²¹ He

never felt free to unleash the military without restraints. The relationship between bombing North Vietnam and public opinion was like that of a parent needing to discipline a misbehaving child; everyone agreed the child needed spanking, but the parent had to be very careful not to spank too hard and be charged with child abuse. ROEs allowed President Johnson to appear in control, operating legally, and using reasonable force to achieve his objectives. This image would hopefully keep the America and the world content with the direction and execution of the air war.

A Congressional hearing in March 1985 revealed that the Department of Defense (DOD) had sole responsibility for issuing the ROEs in Vietnam, pending any disapproval by the President. Secretary of Defense Robert McNamara tasked the JCS to publish the rules and to send them to operational commanders. Attack orders could never be more permissive than the JCS published ROEs, but they could be more restrictive under special situations or conditions.²² Changes to the rules could not occur without debate and those debates were resolved at the Department of Defense level, often by Secretary McNamara. More often than not, as will be discussed later, military advice concerning these rules was ignored and limited.

The limited Rolling Thunder air campaign occurred during a period when many aspects of US Air Force aerospace doctrine rested under a "nuclear umbrella". After the Korean War, the prospect of nuclear war had dominated planning for war by American air leaders. They prepared to fight a large-scale conflict with the Soviet Union, not the limited war they found in Vietnam. Other than Korea, the United States had meager experience fighting low-intensity conflicts. Yet, the spectrum of conflict was wide and leaders realized the need for having some conventional air war capability, although they continued to stress preparation for "general war." Basic Aerospace Doctrine, according to the 1964 Air Force Manual (AFM) 1-1, defined the strategic goal of

interdiction missions in terms of conventional ordnance. Successful interdiction missions required large numbers of aircraft operating on a twenty-four hour-a-day basis over target areas. Sustained air strikes would be coordinated to reduce enemy logistical support below the high level necessary to sustain combat operations.²³ This aerospace doctrine stressed the principle of mass and the need to destroy vital military targets through continuous attacks.

"Tactical Air Operations," the 1965 edition of AFM 2-1, revealed that US Air Force doctrine called for air power to inflict maximum damage to enemy forces and their supporting structure by operating against heartland targets.²⁴ AFM 2-1 stressed the principle of surprise and the importance of striking those targets vital to enemy warfighting capability and his will to fight.

These doctrinal principles were ignored by President Johnson and his civilian advisors as they directed Rolling Thunder. They appeared somewhat blinded by the supposed advantages of self-imposed restrictions: preventing communist superpower intervention and World War III, a tightly controlled air war that would pacify world and American public opinion, and conserve more dollars for American social reforms. Military leaders fought to eliminate the ROEs, which violated the key doctrinal tenets of Air Force strategic bombing through geographic prohibitions, target denial, and stringent operating rules. The commanders sought to bring these disadvantages of ROE restrictions to light. President Johnson and Secretary McNamara's strategy of "graduated" application of air power conflicted with principles of war such as mass and surprise.²⁵ In addition, their determination of the ROEs violated the principles of centralized control and decentralized execution, which has long been a hallmark of successful command.

In World War II, the United States launched a massive, aggressive air campaign utilizing principles of war which later became the foundation of Air Force published doctrine. An

aggressive air offensive aimed at achieving maximum results did not develop during Rolling Thunder. The restrictive ROEs violated doctrinal requirements at every turn. The piecemeal application of air power throughout Rolling Thunder was a far cry from the continuous and sustained operations called for in the basic US Air Force doctrine of the mid-1960s.

In late 1965, air commanders divided North Vietnam into sectors numbered one through six. Sector numbers increased northward and most of North Vietnam's significant military and industrial targets were in sector six. Basic Air Force doctrine called for attacks against the enemy's heartland, but ROEs these vital targets immune to bombing for most of the war. Air attacks started in 1965 primarily in sector one, just north of the Demilitarized Zone (DMZ), and gradually moved north. This gradual movement gave the North Vietnamese an opportunity to disperse targets such as oil storage by the time the first aircraft bombed Hanoi in the summer of 1966. This dispersal made targets more difficult to find and destroy. It seemed too little bombing was done too late to be decisive. Attacks above the twentieth parallel, against the heartland, were exceptions to the rules and never occurred on a regular basis. By not allowing air commanders to wage the air campaign according to us Air Force doctrinal principles, President Johnson and his political advisors made its potential to achieve success problematic.

CHAPTER 3: IMPACT OF ROEs ON MILITARY AND AIRCREWS

Ironically, ROEs minimized destruction to North Vietnam's most important targets, and perhaps their most damaging impact was on the military commanders and the aircrews flying the actual combat missions over North Vietnam. They were forced to fly and fight in a manner contrary to expectations, training, and published doctrine. The self-imposed and restrictive rules prevented the United States from ever employing the maximum conventional strength of its superior air power during Rolling Thunder. Military chiefs equated this "holding back of power" to what aircrews later labeled as "fighting with one hand tied behind their backs." This method of fighting challenged Americans' traditional view of war. A decade earlier in Korea, General Douglas MacArthur had voiced his theory on the proper use of military force in a limited war: "Once war is forced upon us, there is no alternative than to apply all available means to bring it to a swift end; in war, there can be no substitute for victory."¹ The restrictive nature of the ROEs made adherence to MacArthur's tenet impossible for those brave crews flying missions over North Vietnam.

These rules seemed to force aircrews to fight in a no-win fashion and produced a rift between military and civilian over how to conduct the air war effectively. Civilian leaders were convinced these rules were needed to keep the war limited while achieving the US objectives of reducing the supply flow, increasing the cost of sending men and war materials from North Vietnam to South Vietnam, and making it clear to the leaders of North Vietnam that they would pay a high price for continuing their action. Achieving these objectives depended, they believed, not upon a current high level of bombing, but rather upon the credible threat of future destruction which North Vietnam could avoid by agreeing to negotiate.² The Secretary of Defense

recognized that "the key to achieving these objectives was the interdiction of lines of communication (LOCs) in southern NVN with gradual increases in the number of strikes and the intensity of bombing."³ The military, on the other hand, wanted early and decisive aerial blows struck at the war-making capabilities of North Vietnam.

At a commander's conference in January 1966, Admiral U.S. Grant Sharp, the Commander in Chief of Pacific command, and other military commanders realized the restricted and limited air war was not producing desired results. They proposed three tasks to accomplish published objectives: disrupt external assistance being provided to North Vietnam, impede the movement of men and material into South Vietnam, and completely destroy those resources, military facilities and operations already in North Vietnam which contributed most to the support of aggression.⁴ Much of North Vietnam, especially the resources and military facilities contributing the most to the North's war efforts, was heavily insulated by ROEs and off-limits to American aircraft. The military sought a quick kill with blows to the heart, while civilian leaders sought gradual blows against the extremities to foreshadow stronger attacks to come. Yet Military and civilian leaders alike would learn, as history had often shown, the will of a nation is not easily broken with aerial bombing.

This internal battle between military and civilian chiefs continued throughout the Rolling Thunder campaign. President Johnson's distrust of the military resulted from his belief that generals knew only two words: spend and bomb.⁵ Thus, the President often ignored the professional advice and counsel of military experts. This disregard for military advice was pointedly demonstrated during LBJ's Tuesday lunches, where much of the planning and targeting for the air campaign took place. No military officer, not even the chairman of the JCS, attended those luncheons on a regular basis until late 1967.⁶

Campaign targeting and planning suffered due to this lack of military expertise. The target spectrum in North Vietnam, despite its agrarian economy, was significant and never suffered from a shortage of targets.⁷ But, permissible targets formed no part of a coherent pattern; there was no rhyme or reason to the targeting process; aircrews often found themselves repeatedly tasked to fly against targets already destroyed, while other targets such as MIG airfields and SAM sites remained off-limits.⁸ ROEs narrowed the range of available targets and initially limited attacks to targets in southern North Vietnam. The JCS target list contained significant military targets further north, but these targets remained free from attacks for over a year. During all of 1966, less than one percent of the total sorties flown against NVN attacked fixed targets from the JCS target list.⁹ President Johnson and his Tuesday lunch group often had little idea of the capabilities of equipment or of realities such as weather; aircrews went out with rockets against bridges and tried to interdict dirt roads with napalm, but dirt did not burn very well,¹⁰ and Bullpup missiles at the Thanh Hoa Bridge were about as effective as shooting B-B pellets at a Sherman tank.¹¹ Many targets, particularly ones in the Hanoi and Haiphong areas, could only be attacked if placed on target lists by the President or the Secretary of Defense. Aircrews were given time periods of one to two weeks to attack and destroy these targets before they were removed from the list. Monsoon weather prevented many targets from ever being attacked. On the other hand, attacks continued against selected targets for the entire time period even if they were destroyed earlier.¹² This Tuesday afternoon pattern of planning and targeting during Rolling Thunder became standard as the campaign progressed.

Why were American pilots often sent after seemingly worthless targets and not at the enemy's centers of gravity? In a 1966 congressional testimony, Secretary McNamara attempted to answer this question by providing a personal analysis of the targeting problem. He insisted

that targets influencing operations in South Vietnam were not the power plants, oil, harbors, dams, or other targets in the restricted areas of North Vietnam; the targets affecting the war in South Vietnam were the roads and war materials moving over these roads; North Vietnamese heartland targets could be destroyed if attacked, but they were not targets of fundamental consequence to conducting operations in South Vietnam.¹³ Needless to say, many professional military leaders strongly disagreed with Secretary McNamara's assessment. But regardless of their disagreement, "the President and the Secretary of Defense continued to make the final decisions on what targets were authorized, the size and frequency of sorties, and in many instances even the tactics used by American pilots."¹⁴ The President aimed at keeping the war limited and under control, and ROEs provided the key instrument for doing so. But through the eyes of a young fighter pilot, "ROEs were a bunch of rules created by US leaders to cover themselves; then each subordinate commander added a few more rules to cover himself, and pretty soon everyone was covered --except the fighter pilot, and he had to know all the rules."¹⁵

President Johnson's micromanagement of the air war through ROEs greatly affected the aircrews flying the combat missions. Civilian leaders had hoped the threat of severe bombing would bring Hanoi to the conference table. Their restrictive ROEs prevented the use of one weapon system capable of striking fear in the hearts of anyone in its path: the B-52. The giant bomber was used extensively in South Vietnam but rarely over North Vietnam. It could simultaneously provide surprise and massive firepower. A 1967 Rand Corporation study revealed that fear of B-52 attacks seemed widespread and not confined only to areas that had experienced them. After questioning several hundred North Vietnamese prisoners, Rand analysts found the B-52 to be the most devastating and frightening weapon used in Vietnam. Its presence normally became known when hundreds of bombs exploded overhead, and the weapon was said

to have great effect on the enemy's morale.¹⁶ The memoir of Truong Nhu Tang, Viet Cong Minister of Justice, confirms Rand's conclusions. According to Mr. Truong, nothing the guerrillas endured compared with the stark terrorization of the B-52 bombardments. The bombing raids translated into an experience of undiluted psychological terror: soldiers lost control of bodily functions as their minds screamed incomprehensible orders to get away. The terror was nearly complete and felt as if one was caught in the Apocalypse.¹⁷

President Johnson prohibited extensive use of the B-52 in Rolling Thunder because he believed that its employment would have signaled a higher level of escalation than American policy dictated, and that it might have caused intervention by China and the USSR.¹⁸ Fighter aircraft, primarily the F-4 and F-105, carried the burden of flying air strikes over North Vietnam. Compared to the B-52, these aircraft were limited in size, limited in range, limited in bomb-carrying capacity, and had little or no all-weather and night-bombing capabilities. Fighter aircraft normally carried a maximum load of nine 500-pound bombs, while modified B-52s could carry one hundred and eight such bombs. Twelve fighter aircraft were needed to drop the same amount of ordnance as one B-52. United States Air Force doctrine recognized that successful interdiction with conventional weapons required around-the-clock attacks. B-52s could accomplish this task, but most fighters were capable of effective bombing only during the day and under reasonable weather. Prohibiting B-52s over North Vietnam also denied the Air Force the ability to mass impressive amounts of firepower. Using fighter aircraft to accomplish limited objectives mirrored the limited and restrictive ROEs.

The aircrews flying these fighter aircraft soon found that learning and living with the ROEs would not be easy tasks. Over ninety percent of all aircrews believed that ROEs were too restrictive, complicated, confusing, and resulted in large numbers of aircraft and aircrew losses.¹⁹

For instance, one pilot remembered losing a friend while attacking a railroad bridge in North Vietnam. His flight was forced to overfly Gia Lam International Airfield before hitting the primary target. Antiaircraft artillery (AAA) and SAMs at this airfield fired at his flight all the way into the target area. Although the enemy was shooting, the ROEs prohibited him from firing back. Many other targets enjoyed the same immunity from attacks: Kep and Phuc Yen airfields to name a few.²⁰ The numerous rules, constant changes in them, and the subtle differences between them all contributed to a complex situation for the aircrews.²¹ Another pilot described ROEs as confusing even when sitting on the ground reading them. All pilots had to review them once a month and certify that they understood them. While they may have understood them as far as reading a piece of paper was concerned, the cumbersome directives did not transpose well to a fast moving combat situation.²² Some crews depended totally on forward air controllers (FAC) over SVN and radar control over NVN to keep them within the boundaries of the ROEs because one would have to spend an hour studying each day simply to keep up with ROE changes.²³

The complex nature of the rules guaranteed that violations would occur. The United States drew invisible boundaries around certain areas in Southeast Asia, and pilots flying beyond those borders were prosecuted. If a pilot made a navigational error and over flew an area containing absolutely nothing but forest and jungle, he was chastised and disciplined by the Air Force, and his flying career could be ruined.²⁴ In one such case, a pilot attacked a SAM site under construction after being fired on by AAA near the site. The consequences of this violation were immediate grounding and court-martial charges; ironically, the pilot in this case was shot down and killed before charges could be carried out.²⁵ A more famous case was the accidental strafing of the Soviet ship Turkestan in 1967 near Haiphong; both aircrews and their commander,

who fought hard to protect them, received general court-martials.²⁶ worry over ROE violations destroyed a great deal of initiative by aircrews. The rules, at times, caused lucrative targets of opportunity to be missed because fighters could not attack in certain area of North Vietnam without being under the control and direction of a FAC.²⁷ To many aircrews, it seemed impossible to find a way to do what was ordered and not get killed by the enemy or "hanged" by the United States government in the process.²⁸

The ROEs made many aircrews feel as if they were fighting two enemies: the North Vietnamese and American leaders in the White House. Throughout Rolling Thunder, the aviators had to exercise extreme care, at the risk of losing their own lives, to avoid populated areas and civilians casualties. Many pilots were shot down because ROEs required approach angles and other tactics designed to reduce civilian casualties rather than to afford maximum protection to the attacking aircraft.²⁹ A Bill Cosby comedy routine in the late 1960s inadvertently parodied such ROEs in Vietnam. Describing revolutionary war tactics, Mr Cosby cast the opposing generals as team captains receiving pregame instructions from the referee:

Cap'n Washington meet Cap'n Cornwallis. Cap'n Cornwallis meet Cap'n Washington. Cap'n Cornwallis, your team gets to wear bright red coats, stand in nice straight lines, and march around in the open. Cap'n Washington, your team gets to hide behind trees, shoot from behind rocks, and run away if the red coats get too close. Good luck to both of you.³⁰

Most aircrews felt they were on the same team as Cap'n Cornwallis and were fighting a losing battle. American losses over North Vietnam climbed steadily; the 539 aircraft lost during 1966 and 1967 indicated to aircrews that it seemed mathematically impossible to survive a one hundred mission tour.³¹ Many of these losses resulted directly from restrictions against attacking SAM sites, enemy aircraft and MIG airfields, and other legitimate military targets located in or around populated areas. ROEs allowed these air defense systems to grow and develop until they

became superior to those in Korea, and in some locations equal to any concentration encountered in World War II.³² Hanoi became the most heavily defended city in the world, guaranteeing continued American losses as long as such restraints prevailed.

For each flight of aircraft flying over North Vietnam, the ROEs usually assured one thing: that some of them would not come back home. Keeping morale up in the face of these odds would seem difficult. But during forty-five visits to Vietnam, retired General Ira Baker reported that "troop morale was surprisingly high; there was criticism and much frustration about the restrictions imposed by Washington; and no fighting man favored the limited bombing of North Vietnam."³³ In general, as losses continued to rise and the rules remained as restrictive, faith in American leaders began to erode. One pilot reflected those same sentiments when he wrote of how tired he was of "being told how to fly my aircraft in combat, flying my aircraft for minimum effect, and self-styled experts trying to dictate basic military policy and succeeding."³⁴ An official and authorized rest and recreation (R&R) for combat crews might have improved morale as well as operations in the fighter units; instead, aircrews received no travel or travel priority to places away from the war zone.³⁵ But, keeping faith in American decision-makers and in the way they conducted the air war seemed a bigger problem than morale. The aviators never lost the will nor the courage to fight the enemy, but they were extremely frustrated at not being allowed to flight the North Vietnamese as they thought best. It took extraordinary discipline and courage for aircrews to fly their missions given the deadly combination of ROEs and North Vietnam's heavy air defenses.

CHAPTER 4: ROLLING THUNDER --MISSION EFFECTIVENESS

The controversial nature of Rolling Thunder and its seeming lack of impact on North Vietnam resulted in many studies that analyzed the campaign's effectiveness. When Rolling Thunder began in 1965, North Vietnam had practically no AAA guns or SAMs, and very few fighter aircraft. Its main transportation links consisted of two main railroads, one major port at Haiphong, and two smaller ports; the military felt confident that knocking out each of these targets would greatly complicate support and aid to the North Vietnamese from foreign sources.¹ Many military leaders believed the shift in focus to these vital targets above the twentieth parallel did not happen soon enough. Air commanders told a 1967 Senate Subcommittee that they believed the bombing had been much less effective than it might have been if the overly restrictive ROEs imposed on Rolling Thunder had been lifted.² Although the campaign improved the morale of South Vietnamese, it failed to shake the morale of the North Vietnamese in any appreciable manner. It also failed to persuade Hanoi to stop backing the Viet Cong, and hampered but never halted the steady flow of men and supplies into SVN.³ with respect to the interdiction of men and materials, it appeared that "no combination of action against NVN short of destruction of the NVN regime or occupation of its territory would physically reduce the flow of men and materials below the relatively small amount needed by enemy forces to continue the war in South Vietnam".⁴ President Johnson's fear of escalating the conflict prevented serious thoughts of a substantial increase in bombing. Rolling Thunder, with its restrictive ROEs, again demonstrated the lesson of the Strangle Operations during World War II and Korea: the near impossibility of using interdiction to stop the supply of enemy forces needing minimal supplies. In 1965, a minimum of 12,000 North Vietnamese soldiers had infiltrated South Vietnam, but by

1968, more than 300,000 North Vietnamese troops had entered South Vietnam.⁵

Regardless of the ROEs, there was general agreement that Rolling Thunder caused extensive damage to the military, economic, and transportation infrastructures of North Vietnam: bombing reportedly destroyed seventy-seven percent of all ammunition depots, sixty-five percent of all fuel storage, fifty-nine percent of all power plants, fifty-five percent of major bridges, and thirty-nine percent of rail road shops.⁶ But even in the face of such massive destruction, a Rand appraisal in December 1966 could find no evidence that Hanoi, economically and politically, would not be able to withstand a long, hard war with the United States.⁷ North Vietnam offset much of this destruction with a continuous flow of materials from external sources and with a large labor force. A 1966 JCS study revealed that ROEs permitted the enemy to receive these war materials from China and Russia along routes immune from attacks, to then disperse and store the materials in politically assured sanctuaries from which they could be infiltrated into south Vietnam.⁸ During the first quarter of 1967, general cargo deliveries through Haiphong set new records: 100,680 metric tons of food passed through this port in 1967 as compared to 77,100 metric tons 'during 1966.'⁹ The North Vietnamese came to rely on imports from outside sources; daily supply imports averaged 5,700 tons a day¹⁰ and POL imports alone increased forty-four percent from 1965-1967.¹¹ Enemy battalions in SVN fought an average of one day in thirty and required a daily supply minimum of roughly 380 tons. Of this amount, the Communists needed only 34 tons a day from sources outside South Vietnam.¹² This amount equated to less than one percent of the daily tonnage imported into North Vietnam. The North Vietnamese were receiving far more imports than were needed to wage an effective guerrilla war in south Vietnam.

In addition to the vast imports, a well-organized labor force of over 300,000 North Vietnamese engaged in the repair of bomb damages to roads, bridges, railroads, and other

facilities. This labor force was a two edged sword: it put somewhat of a logistical strain on North Vietnam, but more importantly it gave the North Vietnamese the ability to quickly repair and offset much of the damage done by US bombing.¹³ During one bombing attack in 1966, B-52s dropped six hundred and ninety-five 750-pound bombs and six hundred and ninety-four 1000-pound bombs on a road segment of Mu Gia Pass, from an altitude above 30,000 feet. photography revealed that twenty-seven hours after the strike, all craters were filled in and there were vehicle tracks across them.¹⁴

By 1968, only one of Secretary McNamara's three stated objectives was met, and it seemed highly unlikely that the remaining two objectives would be accomplished. In 1967, Senator Stennis' Senate committee gave President Johnson's Administration failing marks on its conduct of the bombing campaign. The committee concluded:

The achievement of campaign objectives, to a greater extent, can not be attributed to inability or impotence of air power. It attests, rather to the fragmentation of US air might by overly restrictive controls, limitations, and doctrine of gradualism placed on US aviation forces which prevented them from waging the air campaign in the manner and according to the time table which was best calculated to achieve maximum results.¹⁵

The Stennis committee, along with most air commanders, sought fewer restrictions and more bombing of North Vietnam to achieve maximum results. Militarily, US bombing had destroyed most authorized targets in North Vietnam. As a result, air commanders began to equate mission effectiveness with the number of targets destroyed. Yet even if political controls had been removed from Rolling Thunder, the final results of bombing North Vietnam would likely have remained unchanged. American bombing doctrine, the nature of the guerrilla war in Vietnam, and the strong resolve of the North Vietnamese people would probably have prevented any significant changes in bombing effectiveness. During Rolling Thunder, American air power was geared to fight a conventional war against an industrialized nation like the Soviet Union.

Instead, the US forces faced a guerrilla war that differed from past wars and experiences. The destruction of a nation's industry, main lines of communication, power plants, and other vital targets would devastate and paralyze most industrialized countries. This destruction would deny an enemy populace the comfort of running water, electricity, gas and oil, transportation systems, and many other day-to-day conveniences. By increasing the bombing, air planners falsely hoped for the same intolerable results over North Vietnam as would be expected from an air campaign against an industrialized nation. The Second Air Division Commander General Joseph H. Moore believed that one of the main errors Americans made in North Vietnam was to judge the North Vietnamese people and their predicted reactions according to American standards; they believed the North Vietnamese, like people of similar backgrounds, would quickly reconsider their actions once a superpower took a strong position against them.¹⁶ Instead, North Vietnam was an agrarian society with almost no industry and a limited transportation system. How could increased bombing hope to paralyze people who were more accustomed to burning coal and wood instead of gas and oil, to burning candles rather than electrical lights, and to driving animal carts instead of trucks and cars? For most North Vietnamese, the bicycle was still the primary mode of transportation. It would prove difficult to coerce an enemy by destroying comforts which he had never enjoyed before.

Past air campaigns suggested that war materials and men would continue to flow regardless of the intensity of bombing. But, could increased bombing reduce the flow of war materials below levels needed to sustain and support the insurgency in South Vietnam? Some would argue that this question was irrelevant in a guerrilla war. The nature of a guerrilla war provides the enemy with an advantageous ally: time. So even if bombing reduced the flow of supplies to a trickle, the enemy would use his "time ally" to stockpile the few supplies flowing in

until conditions were in his favor. In other words, if five hundred tanks were needed for an offensive, the Viet Cong would gladly accept one tank a day and wait until all five hundred tanks were received before beginning the attack. The key to the guerrilla war in Vietnam seemed to hinge more on determination than conventional warfighting capability, and the enemy possessed vastly more will power than American leaders had anticipated. The Viet Cong and North Vietnamese maintained the initiative throughout the war, deciding when and where to fight. The enemy's efficient use of time and patience had contributed greatly to Vietnam's decisive victory over France in 1954. There is little reason to believe that these same attributes would not also be used, to prolong the Vietnam war and defeat the Americans, who valued quick, decisive wars with minimal casualties.

"Know your enemy and know yourself; your victory will never be endangered."¹⁷

Americans failed to heed this advice during Rolling Thunder. Increased bombing would destroy more enemy targets but would not guarantee aerial victory. The North Vietnamese were proud, determined people willing and capable of enduring the increased onslaught of bombing. During the 1968 Air Force Association's twenty-second national convention, General John R. Blanford highlighted that the degree of North Vietnam's determination to continue its support of the insurgency in South Vietnam was reflected by the many losses it willingly accepted in 1966 and 1967: bombing destroyed and damaged over 14,000 trucks, almost 5,000 railway cars, and over 21,000 logistical water craft, just to name a few. An increase in the enemy's air defenses by more than tenfold since 1965 also reflected his determination to continue the fight.¹⁸ The enemy was capable of mounting considerable efforts to offset bombing damage.

The North Vietnamese could compensate for increased bombing. For starts, increased bombing would not stop increased imports from foreign sources. Russia and China, not North

Vietnam, would continue to absorb most of the financial and material costs of the bombing. The enemy would continue to limit his movement mostly to night and during bad weather to take advantage of the limited all weather capabilities of US fighters.¹⁹ Dispersion, concealment, and mobility of war materials would further dampen bombing effects. For example, aircrews experienced extreme difficulties in destroying certain targets like radar sites and radio communications, mainly due to their mobility and lack of pinpoint intelligence. Also, targets such as POL were dispersed in fifty-five gallon drums and five gallon cans and kept in old bomb craters, caves, rice paddies, truck parks, and river banks which made them extremely difficult to locate and destroy.²⁰ The enemy was willing to go through considerable efforts to maintain the movement of war materials south: constantly repairing damaged LOCs, building new ones, using secondary roads and trails, using ox and horse carts, human portage, water craft, and even bicycles to keep the supplies headed for South Vietnam.²¹ A labor force of several hundred thousand workers would continue to repair damages, man air defense systems, and conduct other war-related activities. A Peking radio broadcast in 1965 revealed the effectiveness and determination of the labor force when it reported how after US bombers hit a certain bridge, that very evening more than three thousand people rushed to the spot from all directions, carrying with them hurricane lamps and tools; within a few hours the bridge was back in service.²² North Vietnam would also continue to prepare and man heavy air defense systems that hampered bombing effectiveness. The North Vietnamese could match increased bombing with increased countermeasures and heightened resolve. If the Americans chose to up the ante, they were prepared to meet the challenge.

Thus, removing the Rules of Engagement would not have guaranteed an American victory in Vietnam. Fewer restrictions and increased attacks against the heartland of North

Vietnam would have resulted in more vehicles, bridges, and other military targets being destroyed. But, air commanders were likely mistaken in their belief that increased bombing would prove too costly for the enemy to continue his support of the insurgency in South Vietnam. ROEs contributed to the failure of air power against North Vietnam. Yet enough evidence does not exist to conclude definitely that without the ROEs, the American bombing of North Vietnam would have been successful.

CHAPTER 5: IMPACT OF ROEs ON THE ENEMY

The restrictive nature of the ROEs actually aided the enemy in his fight against American air strikes over North Vietnam. The North Vietnamese used the rules as a weapon against America to cushion themselves and their homeland against the bombing. Decision-makers at the White House initially ignored the advantages that the ROEs gave the enemy because they believed the war would be short-lived. The future threat of US air power inflicting untold damage on North Vietnam was believed enough to break the enemy's will to fight and force him to the peace table. The exact amount of air power needed to persuade North Vietnam to stop backing the Viet Cong was not known, but civilian leaders believed this "magic" amount would reveal itself once they arrived there through gradual increases in air power. Such a strategy had been effectively employed in 1938, when Hitler used the future threat of aerial destruction from his "risk Luftwaffe" to get Czechoslovakia to surrender without a fight, and to get the French and British to accept his conditions at Munich. Yet as seen during the Battle of Britain and the air campaigns against Germany during World War II, the will of a nation is not easily broken even with extensive aerial bombing.

ROEs during Rolling Thunder did not allow concentrated bombing, and the piecemeal approach seemed to strengthen rather than destroy the will of the North Vietnamese. American leaders made it clear in published statements that they had no intention of destroying the government of North Vietnam; the North Vietnamese interpreted the ROEs as signs of American weakness in fighting the war.¹ These statements freed North Vietnamese from having to expend men and materials to fight off an invasion, naval blockade, or any other intense military action. While the United States provided many ROEs, North Vietnam followed General Vo Nguyen

Giap's declaration, "There was only one rule in war: one must win."² ROEs enhanced North Vietnam's winning attitude and provided them with several major military advantages: sanctuaries, restricted areas, and time to prepare a superb air defense system to engage American air forces.

The sanctuaries provided by ROEs for North Vietnam gave the enemy tremendous military advantages. Those sanctuaries included: the thirty-mile restricted area and ten-mile prohibited area around Hanoi, the ten-mile restricted area and four-mile prohibited area around Haiphong, and a twenty-five to thirty-mile "buffer zone" along the Chinese border. These safe havens prevented air attacks against key military targets in North Vietnam without prior approval from Washington. The enemy took advantage of the restrictions by importing domestic and war materials to offset much of the bomb damage done by us aircraft. In one case, two thousand generators were imported to counter the destruction of power plants.³ More than eighty-five percent of the sinews of war arrived in North Vietnam by sea through the safe port of Haiphong, where goods were unloaded twenty-four hours a day.⁴

The North Vietnamese used these safe areas to disperse, stockpile, and concentrate war materials until they could be moved into South Vietnam. The Chinese buffer zone alone created thousands of square miles where the enemy could store and transport his materials free from the harassment of air attacks. Pilots constantly reported seeing trucks outside these sanctuaries only to have them race back to them where they knew they would be safe.⁵ These sanctuaries helped the North Vietnamese to sustain their combat operations and made the blows from US air attacks less effective. Air power was also weakened by the inability to attack targets that might result in civilian casualties. This rule was rigidly applied in Vietnam, and also called for aircrews to avoid endangering foreign personnel and shipping. Many populated areas were placed off limits to

bombing. The enemy took advantage of this rule by placing air defense systems and war materials in or near populated areas. Even when intelligence photographs showed streets lined with war supplies, ROEs prevented aircraft from hitting them even though the targets were now legitimate according to the laws of war.⁶ Any accidental deaths or damage resulting from attacks on these targets would give the enemy a propaganda tool to charge the United States with indiscriminately bombing innocent people. The North Vietnamese regularly exaggerated the most trivial damage to create propaganda aimed at destroying popular support for US conduct of the war. The American military took additional restrictive and precautionary steps to keep down civilian casualties: fighter aircraft could conduct strikes only under favorable weather conditions, with good visibility and only minimal cloud cover so targets were readily identified.⁷ The need for good weather and positive target identification forced pilots to operate at lower altitudes than desired. Many times the lower altitude placed US aircrews inside the lethal range of the enemy's advanced air defense systems.

The requirement to identify targets accurately limited bombing to hours of daylight due to a lack of fighters capable of all weather and night operations, which in turn allowed the enemy to move more freely at night. The winter monsoon season, with its rain and low ceilings from December through May, seriously hindered air operations over North Vietnam. The enemy was quick to take advantage of these limits by concentrating his forces and materials in protected areas during the day and doing most of his movement under the cover of darkness and bad weather. The North Vietnamese also took advantage of relatively short distances between prohibited areas by holding large concentrations of rolling stock during daylight hours and racing the short distances between sanctuaries at night and during inclement weather.⁸

These sanctuaries and protected areas resulting from ROEs gave the enemy another

military advantage: time. Freedom from air attacks in certain regions gave the North Vietnamese the time to develop one of the most sophisticated air defense systems in the world. SAM sites increased from fifteen in 1965 to 270 by the end of 1967, and the number of missiles fired by the North Vietnamese climbed from 200 in 1965 to 3,484 in 1967. The number of antiaircraft artillery guns grew from 700 in 1965 to over 7400 by March 1968.⁹ These increases in weapons gave the enemy an awesome ability to fight back and inflict severe damage on American aircrews and aircraft. The American military officially recorded 1096 aircraft shot down by these air defense systems between March 1965 and November 1968.¹⁰

MIGs and SAMs were the more advanced elements of the air defense system, but antiaircraft artillery accounted for the most aerial kills. With air defense systems near their peak, summary reports of aircraft losses from 1967-1968 indicate that AAA accounted for more than seventy-five percent of all US aircraft shot down over North Vietnam.¹¹ Fighters loaded with bombs normally defeated MIGs and SAMs by flying fast and at low altitudes. In Vietnam, this tactic placed fighters within lethal range of the AAA guns. The ROEs also seemed to protect the MIGs and their airfields. American aircraft were prohibited from engaging MIG's except as required to protect their strike forces. Even when chasing hostile MIGs, US fighters were not authorized to attack North Vietnamese MIG fighter bases until 1967. One pilot explained the situation by noting that "MIGs could wait on the end of their runway until they saw us fighters approaching, then takeoff, make one turn, and wound up in shooting position on the trailing flight of aircraft".¹² With the help of the ROEs, the North Vietnamese always seemed to have plenty of guns, shells, missiles, and MIGs to throw at: American strike forces over their homeland.¹³ The enemy used the rules to his best advantage, choosing the most advantageous time and place to fight.

North Vietnam, compared to many other nations geographically, is not a large country. The synergistic effect of the sanctuaries and limited target selection resulting from the ROEs allowed the North Vietnamese to predict where many strikes would occur. The ROEs reduced American air commanders' ability to deceive the enemy by channeling attacking aircraft into narrower, more predictable routes where the enemy would further concentrate his defensive forces.¹⁴ President Johnson and his advisors also forced the aircrews to attack North Vietnam in small steps over a protracted period. Admiral Sharp felt this incremental approach allowed the enemy to predict with reasonable accuracy when important targets would be hit.¹⁵ According to General Moore, in many cases the enemy did not even have to predict where US strikes would occur; American newspapers, public announcements, and previous attacks provided evidence to the enemy as to what targets would be hit. For instance, the North Vietnamese knew that most army barracks, camp and training areas, and other military type facilities would be hit. By the time these areas 'were attacked, the enemy had dispersed and American fighters destroyed many empty buildings.¹⁶ One pilot stated as early as 1966: "I don't see why I should risk my life bombing empty barracks and buses; if they want us to risk our lives, why don't they give us meaningful targets to attack?"¹⁷ The predictable nature of the air offensive led to the continued loss of American aircraft throughout the three and one-half year span of Rolling Thunder.

CHAPTER 6: CONCLUSIONS

In wars, military strategy does not always mirror published doctrine. Winning nations have often been those more willing to close the gap between doctrine and strategy as much as possible. In Vietnam during the Rolling Thunder campaign, strategy and doctrine were mismatched, and not enough was done by American decision-makers to allow air commanders to meld the two. Throughout Rolling Thunder, military leaders screamed for changes to the operational conduct of the air war. President Johnson and his civilian advisors, through the ROEs, maintained tight control of the air war and substantially degraded air power's effectiveness. They did not intend for Rolling Thunder to "win" the war. Rather, they sought to convince North Vietnamese to stop supporting the insurgency in the South or to make them pay a heavy cost for not doing so.

ROEs kept the United States fighting to achieve only limited objectives. This violated several tenets of published US Air Force doctrine. The ROEs allowed the President and his Secretary of Defense to not only control the air war from the strategic level, but the rules also allowed them to control the most minute details as well. In many cases, they dictated the number of sorties, the bomb loads carried, the times, and the routes to be flown. This level of control removed two key features of the air power: flexibility and surprise. Attack missions became too predictable. The limited objectives and the small number of sorties prevented air commanders from using the principle of mass. Moreover, in most instances, attacks avoided the most important strategic targets in the enemy's heartland.

Although the ROEs hindered the effective execution of the air campaign, they also allowed the United States to achieve tacit objectives, such as keeping the war from escalating

through the intervention of China and Russia, and preventing World War III. Since World War II, the greatest threats to us national security came from the Soviets and Chinese because they possessed nuclear weapons. Few American war plans were developed without giving consideration to the Chinese and Soviets. The Vietnam War was no different. Military chiefs, adhering to their published doctrine, believed that sufficient forces to defeat these communist superpowers would be more than enough force to deter lesser nations like North Vietnam.¹

The Rolling Thunder air campaign was conducted according to these considerations. The campaign, for the most part, was aimed at destroying lines of communication and rolling stock in the southern panhandle of NVN. The majority of the interdiction sorties attacked targets along the periphery instead of in the North Vietnamese heartland. The ROES, aided by the strategy of gradualism, created sanctuaries and placed many targets off-limits to US bombing: Hanoi, Haiphong, and the Chinese "buffer zone," populated areas, SAM sites, MIG airfields, coastal targets, and many others. Ironically, these areas contained ninety percent of the population and the most vital military targets, but received the fewest attacks. Bombing was not done soon enough, and in enough mass, to convince the North Vietnamese to change their ways.

In the final analysis, the ROEs were perhaps most damaging to the aircrews tasked to fly the missions. Airmen were told how to fly and how to fight, and the direction they received did not conform to their training. The maze of restrictions caused the loss of many men and expensive aircraft, and presented aircrews with missions nearly impossible to accomplish. Just learning all required ROEs became a near impossible task. The number of rules were vast, confusing, and ever-changing. Careers could be destroyed if a restriction was violated. Aircrews felt too much time was spent adhering to the ROEs, while not enough time was spent fighting the enemy.

Besides making flying less effective, the ROEs gave the enemy many advantages. Potential knockout blows delivered by US air power were offset by these ROEs. The import of war supplies into North Vietnam was allowed to continue and was never seriously challenged. The presence of this foreign support helped enable North Vietnam to overcome aerial attacks and continue its struggle. The rules also gave North Vietnam the time to develop one of the most advanced air defense systems in the world and an awesome ability to fight back effectively. The United States was never able to apply enough pressure through air power to force Hanoi to stop its support of the insurgency in the South. The bombing, although restrained, did cause a large amount of damage. Thousands of men, vehicles, watercraft, and many other targets were destroyed.

With the advent of the "new world order," the next American war will most likely be limited. The reunion of Germany, the dissolved Warsaw Pact, the division of the Soviet Union, and the collapse of communism have all lessened the chances of nuclear war. The lessons of the Rolling Thunder may very well apply to limited conflicts in the future. Unique aims of American civilian decision-makers, and the ever-changing world situation, could result in a reappearance of ROEs similar to those of Vietnam. US Air Force doctrine of the 1990s is not dramatically different from the doctrine of the 1960s: both advocate intensive, continuous bombing against the enemy's most vital military and industrial targets. But war for a political objective is measured violence; uncertainty about the proper proportion of violence and control will constitute one of the most important features of future wars.² If the controls are too great, they may hinder an air campaign much as they did to Rolling Thunder, and may aid the enemy more than they aid the United States. To rely on aerial bombing to stop the movement of war materials or to break the will of a nation is still an uncertain prospect. Despite military complaints about

the restrictiveness of ROEs in Vietnam, civilian control of the military remains vital. Yet, military advice and expertise should also be used to avoid fundamental violations of doctrine. The hope is that civilian and military leaders will work together and continue to devise strategies as effective as those exhibited during Desert storm.

United States Air Force doctrine and Air Force training are still geared towards fighting a short, decisive, conventional war to destroy the war-making capacity of an enemy nation while limiting other damage. Few nations, if any, can hope to defeat the United States in conventional warfare. But America's future wars are most likely to be fought for limited objectives instead of for total destruction of the enemy forces. Total war remains unthinkable and suicidal: everyone loses in a nuclear exchange. Yet a limited war also implies rules governing its conduct. Is America capable of preventing the recurrence of hindering ROEs like those that existed during Rolling Thunder in its future air campaigns?

Regardless of the lessons learned from Rolling Thunder, many past and present commanders, including retired General Curtis LeMay, Admiral U.S. Grant Sharp, and General William W. Momyer left Vietnam believing that with the intense and proper use of air power, the United States could have been victorious in that war.³ Right or wrong, there is not enough evidence available either to deny or prove this assertion conclusively. What is apparent is that Vietnam still lives on in the hearts and minds of many Americans. The operational conduct of the air war in the skies over North Vietnam will continue to dictate and influence how the United States will conduct future air campaigns. But for President Bush and for many Americans, particularly air commanders, Vietnam emerged as a standard of how not to fight future air wars.⁴ This perspective was made overwhelmingly clear during the 1991 Desert storm air campaign. General Norman Schwarzkopf, General Colin Powell, and many of the other top military leaders

in the Gulf War had participated in the Vietnam conflict and swore "never again" to repeat many of the mistakes made during Rolling Thunder.⁵ Lieutenant General Charles Horner, the Joint Forces Air Component Commander in the Gulf, was adamant that centralized control and decentralized execution would become normal operating procedures. Unlike Rolling Thunder, air commanders were allowed to match published doctrine and strategy to fight a swift, intense, and decisive air war in the Gulf. The motto of everyone from young airmen to the President of the United States was: "No more Vietnams." President George Bush, through his many televised appearances, constantly assured the American public and the military that the war in the desert would end differently from its predecessor in the jungle. He promised never to let America fight a war with its hand tied behind its back.⁶

It would appear that "victory in the Gulf War was the result of sacrifices in Vietnam."⁷ The Gulf War also had Rules of Engagement, but they differed significantly from those during Rolling Thunder. The ROEs for Desert Storm were far less restrictive than those for Rolling Thunder, and they may shed some light on the direction and impact of ROEs on future air campaigns. To avoid the grave consequences of implementing a rigid code of self-imposed restrictions, American leaders must first accurately identify those objectives that can only be achieved by restraining the application of military power, and establish rules of engagement accordingly. In every limited conflict since World War II, certain "tacit objectives" seem to dictate ROEs more than "published" military and political objectives. Their goals may include: minimizing casualties and collateral damage, securing domestic and international support, and reducing the risk of superpower intervention and escalation into World War III. By no means are these the only implied objectives that may determine ROEs, but they helped define them in Korea, Vietnam, the Gulf War, and will likely continue to do so. Their potential impact on the

application of air power must be weighed carefully before the decision is made to use the air weapon as an offensive force in future low-intensity conflicts.

One implied objective that will probably remain constant is the American desire to minimize casualties and collateral damage. Because of high moral standards, these casualties included combatants and noncombatants, enemy and American alike. The immoral use of force and the loss of too many lives will not be tolerated. In the Gulf War, American pilots used "high-tech" weapons to attack vital targets in or around populated areas. The improved ordnance permitted air commanders to bomb targets even in the downtown area of Baghdad, making the Rules of Engagement for the Gulf War much less restrictive than those for Rolling Thunder. Advanced technology put more vital targets at risk and allowed pilots to destroy the enemy's war-making capabilities while simultaneously sparing human lives and collateral damage. The age of pinpoint accuracy and the ability to destroy many military targets with minimal civilian losses are now realities. Instead of simply worrying about bombing a building, aircrews are now more concerned with putting their bombs through a certain window or door.⁸ This precision allowed the Chairman of the Joint Chiefs of Staff, General Colin Powell, to fulfill his promise to use every tool in the military tool box to win the Gulf War --a far cry from the restricted use of B-52s, napalm, and other high-tech weapons in Vietnam. In all probability, the improved technology will help to assure that future American air wars will be intense, continuous, and without the restraints of too many overly restrictive ROEs.

Ideally, the US must have the backbone of support at home and from abroad during any war. President Bush fought a tough political battle to ensure this support before the first shot was fired in the Gulf War. The political battle ended with thirty-four nations assembling military forces against Iraq and with many others providing nonmilitary aid.⁹ This support not only

isolated the enemy, but it also helped to eliminate two of the greatest concerns of the United states: the risk of superpower intervention and the possibility of sanctuaries.

America was 'unwilling to play the lone role of world policeman as it had in Vietnam, and in this case succeeded in assembling an international police force. President Bush depended on the United Nations, allies, and other world organizations to avert unprovoked aggression. This dependence on assistance from world organizations will hopefully continue. With a struggling economy, force reductions, and base closures around the world, the US can ill afford to fight future wars without extensive and allied support.

The breakup of the Soviet Union and the collapse of communism have forced the former superpower to concentrate on internal problems instead of on external expansion. The dreaded fear of communist expansion and the threat of World War III, for the near future, have decreased. The US must still avoid direct confrontation with the Soviets and any nation possessing nuclear weapons. However, the threat of superpower intervention in Third World conflicts should not dominate American war plans, doctrine, and strategy as it did during Rolling Thunder. This threat caused much of the rift between the military and civilian leaders in Vietnam, and led to the violation of doctrinal principles that characterized the ROEs for the air war against North Vietnam. The success of air operations in Desert Storm shows that future air campaigns can be effectively planned and executed without restrictive ROEs, yet there is no guarantee that the conditions that produced the favorable ROEs in the Gulf will recur. Above all else, political leaders must thoroughly evaluate their objectives in future limited wars. They, together with their military chiefs, must determine if objectives are achievable at an acceptable cost and then determine the impact that ROEs tailored to those objectives will have on the employment of air power.

NOTES

Chapter 2:

1 Congress, Senate, Senator Goldwater speaking on Vietnam Rules Of Engagement Declassified to the President, 99th Congress, 1st Session, Congressional Record (6 March 1985), vol. 131, no. 26, S2632-2640.

2 Department Of Defense, Pentagon Papers, Senator Gravel Edition, (Boston: Beacon Press, 1971-1972), Vol III, 269.

3 Donald C. Winston, "Bomb Restriction Criticism Has Little Effect On Supplemental," Aviation Week, 20 February 1967, 18.

4 Ulysses S. Grant Sharp, Report on the War in Vietnam (Washington D.C.: Government Printing Office, 1968), 16.

5 Headquarters Pacific Air Force, Project ChecoReport: SEA ROE 1966-1969, (Washington D.C.: Government Printing Office, 1969), xi-xii, AFHRA File Number K717.0414-20.

6 Congress, Senate, Senator Goldwater speaking on Vietnam Rules Of Engagement: 1969-1971 to the President, 99th Congress, 1st Session, Congressional Record (18 March 1985), vol. 131, no. 30, 53012.

7 Captain Albert P. Clark, Interview by S.E. Riddebarger, J. Thomas, T.C. Peterson, and K.C. Bett, 12 June 1969, interview 10136, transcript, AFHRA, 42, AFHRA File Number K239.0512-200.

8 Department Of Defense, JCS Pub 1-02: DoD Dictionary of Military and Associated Terms, (Washington D.C.: Government Printing Office, 1989), 317.

9 Congressional Record (18 March 1969), S3012.

10 Congress, Senate, Senator Goldwater speaking on Vietnam Rules of Engagement Declassified: 1966-1969 to the President, 99th Congress, 1st Session, Congressional Record (14 March 1985), vol. 131, no. 29, S2982.

11 JCS Pub 1-02, 264.

12 Ibid., 151.

13 Congressional Record (14 March 1985), S2982.

14 Ibid., 52983-2984.

15 General John D. Ryan, Interview by Richard Clement and John Van Duyn, 20 May 1971, interview 7974, transcript, Washington D.C., 27-28, AFHRA File Number K239.0512.476.

16 W. Hayes Parks, "Rolling Thunder and the Law of War," Air university Review, Jan-Feb 1982, 3.

17 William C. Westmoreland, A Soldier Reports (New York: Dell Publishing Company, 1980), 119.

18 Richard K. Betts and Leslie H. Gelb, The Irony of Vietnam; The System Worked (Washington D.C.: Brookings Institution, 1979), 160.

19 Parks, 7.

20 Pentagon Papers, Gravel Edition, Vol iii, 107.

21 David Halberstam, The Best And The Brightest (New York: Random House" 1969), 641.

22 Congressional Record (18 March 1969), S3012.

23 Department Of USAF, AFM 1-1: Aerospace Doctrine, USAF Basic Doctrine, (Washington D.C.: Government Printing Office, 1964), 5-2.

24 Department Of USAF, AFM 2-1: Aerospace Doctrine, Tactical Air Operations, (Washington D.C.: Government Printing Office, 1965), 2, 15.

25 Parks, 7.

Chapter 3:

1 William Manchester, General MacArthur's Return to America (Boston: Little Brown And Company, 1978), 659.

2 Department of Defense, Pentagon Papers, Senator Gravel Edition, (Boston: Beacon Press, 1971-1972), Vol III, 388.

3 Pacific Air Force, Project Checo Report: SEA ROE 1966-1969, (Washington D.C.: Government Printing Office, 1969), 2, AFHRA File Number K717.0414-20.

4 Ib1d1., 1

5 Richard K. Betts and Leslie H. Gelb, The Irony of Vietnam; The System Worked (Washington D.C.: Brookings Institution, 1979), 137.

6 Jacksel M. Broughton, Going Downtown (New York: Pocket Books, 1988), 90.

7 Air War Symposium, 22nd National Convention Air Force Association, 4 April 1968, interview 10108, transcript, AFHRA, 21, AFHRA File Number K239.0512-096.

8 Jacksel M. Broughton, Thud Ridge (New York: Bantam Books, 1969), xiv-6. -

9 Headquarters USAF, Project Corona Harvest: National Strategy and the Employment of Air Power in SEASIA, Vol 4 (Maxwell AFB: Air University Press, 1970), II-D240

10 Broughton, Going Downtown, 77.

11 A.J.C. Lavalley, ed., The Tale of Two Bridges, (Washington D.C.: Government Printing Office, 1976), 36.

12 Lt Col Robert E. Belli, Interview by Lyn R. Officer and Hugh N. Ahmann, 29 January 1973, interview 645, transcript, Maxwell AFB, Ala., 4-6, AFHRA File Number K239.0512-645.

13 J.S. Butz, "Airpower In Vietnam: The High Price Of Restraint," Air Force and Space Digest, November 1966, 42.

14 William W. Momyer, Air Power in Three Wars, (Washington D.C.: Government Printing Office, 1985), 19.

15 Captain Albert P. Clark, Interview by S.E. Riddebarger, J. Thomas, T.C. Peterson, and K.C. Bett, 12 June 1969, interview 10136, transcript, AFHRA, 43, AFHRA File Number K239.0512-200.

16 "B-52 most feared weapon in Vietnam," Aviation Week, 1 May 1967, 55.

17 Truong Nhu Tang, A Vietcong Memoir (New York: Vintage Books, 1985), 167-168.

18 John Schlight, The War in South Vietnam: The Years of the Offensive 1965-1968 (Washington D.C.: Government Printing Office, 1988), 49.

19 Lt Col William S. Van Gilder, Interview by G. Harrison, 20 June 1968, interview 100, transcript, Maxwell AFB, Ala., 22-23, AFHRA File Number K239.0512-065.

22 Ibid., 22-23.

21 Headquarters Pacific Air Force, Project Corona Harvest: US-Vietnam Relations 1945-1967 Rolling Thunder Begins (Maxwell AFB: Air University Press, 1973), 32.

22 Broughton, Going Downtown, 202.

23 Captain Clark, Interview, 43.

24 Lt Col Belli, Interview, 114.

25 Broughton, Thud Ridge, 93-95.

- 26 Ibid, 261.
- 27 Lt Col Belli, Interview, 114-115.
- 28 G.I. Basil, Pak Six (La Mesa, CA: Associated Creative Writers, 1982), 93-94.
- 29 Guenter Lewy, America in Vietnam (New York: Oxford University Press, 1978), 403.
- 30 John B. Nichols and Barrett Tillman, On Yankee Station (New York: Barrett Tillman, 1987), 15.
- 31 Broughton, Going Downtown, 179.
- 32 Kenneth B. Clark, "Sledgehammers And Flyswatter: Air War In Vietnam," Hawk, 1966, 28.
- 33 General Ira C. Eaker, "Report From Vietnam Indicate Low Morale," Air Force Times, 24 July 1968, 13.
- 34 "Pilot Report From Vietnam," Aviation Week, 19 Sep 1966, 23.
- 35 Lt Col Van Gilder, Interview, 24-25.

Chapter 4:

- 1 Lt General Joseph H. Moore, Interview by S.E. Riddlebarger and V. Castellina, 22 November 1969, interview, transcript, .AFHRA, 9, AFHRA File Number K239.0512-241.
- 2 Headquarters Pacific Air Force, Project Corona Harvest: US-Vietnam Relations 1945-1967 Rolling Thunder Begins (Maxwell AFB: Air University Press, 1973), 93.
- 3 Jacksel M. Broughton, Thud Ridge (New York: Bantam Books, 1969), xii.
- 4 Project Corona Harvest: US-Vietnam Relations 1945-1967 Rolling Thunder Begins, 46.
- 5 Ulysses S. Grant Sharp, Strategy For Defeat: Vietnam in Retrospect (San Rafael, CA: Presidio Press, 1978), 3.
- 6 Guenter Lewy, America in Vietnam (New York: Oxford University Press, 1978), 389-390.
- 7 Headquarters Pacific Air Force, Project Checo Report: Rolling Thunder July 1965 - December 1966, (Washington D.C.: Government Printing Office, 1967), 133.
- 8 Sharp, Strategy For Defeat, 115-116.
- 9 Ibid., 169.

10 Mark Clodfelter, *The Limits of Air Power* (New York: The Free Press, 1989), 135.

11 Air War Symposium, 22nd National Convention Air Force Association, 4 April 1968, interview 10108, transcript, AFHRA, 22, AFHRA File Number K239.0512-096.

12 Headquarters USAF, "Analysis Of Effectiveness Of Interdiction In SEA, Second Progress Report," May 1966, Washington D.C.: Government Printing Office, 2-3, AFHRA File Number K168.187-21.

13 Craig Powell, "Airpower In Vietnam Does Support National Aims," Armed Forces Management, February 1967, 72.

14 Project Checo, Rolling Thunder: July 1965 -December 1966, 50.

15 Jacksel M. Broughton, Going Downtown (New York: Pocket Books, 1988), 188.

16 Lt General Moore, Interview, 10.

17 Sun Tzu, The Art Of War, trans. Samuel B. Griffith (Oxford: Oxford University Press, 1963), 129.

18 Air War Symposium, Interview, 20-23.

19 Project Checo, Rolling Thunder: July 1965 -December 1966, 20.

20 Ibid., 79.

21 Ibid., 127.

22 Ibid., 67-68.

Chapter 5:

1 W. Hayes Parks, "Rolling Thunder and the Law of War," Air University Review, Jan-Feb 1982, 3.

2 John B. Nichols and Barrett Tillman, On Yankee station (New York: Barrett Tillman, 1987), 15.

3 Parks, 7.

4 Ulysses S. Grant Sharp, Report on the War in Vietnam (Washington D.C.: Government Printing Office, 1968), 3.

5 Headquarters Pacific Air Force, Project Corona Harvest: US-Vietnam Relations 1945-1967 Rolling Thunder Begins (Maxwell AFB: Air University Press, 1973), 28.

6 Ulysses S. Grant Sharp, Strategy For Defeat: Vietnam in Retrospect (San Rafael, CA: Presidio Press, 1978), 118-119.

7 Ibid., 128.

8 Project Corona Harvest: US-Vietnam Relations 1945-1967 Rolling Thunder Begins, 28.

9 Guenter Lewy, America in Vietnam (New York: Oxford University Press, 1978), 405.

10 Douglas Pike, PAVN: People's Army of Vietnam (Novato, CA: Presidio Press, 1986), 107.

11 Headquarters Pacific Air Force, Project Checo Report: Rolling Thunder January 1967 -November 1968, (Washington D.C.: Government Printing Office, 1969), 16,43.

12 Jacksel M. Broughton, Going Downtown (New York: Pocket Books, 1988), 139.

13 G.I. Basil, Pak Six (La Mesa, CA: Associated Creative Writers, 1982), 5-6.

14 Project Corona Harvest: US-Vietnam Relations 1945-1967 Rolling Thunder Begins, 28.

15 Sharp, Strategy For Defeat, 3.

16 Lt General Joseph H. Moore, Interview by S. E. Riddlebarger and V. Castellina, 22 November 1969, interview, transcript, AFHRA, 67-78, AFHRA File Number K239.0512-241.

17 George C. Wilson, "Congress Debates Air War Restrictions," Aviation Week and Space Technology, 14 Feb 1966, 28.

Chapter 6:

1 Department Of USAF, AFM 1-1: Aerospace Doctrine, USAF Basic Doctrine, (Washington D.C.: Government Printing Office, 1984), A-4.

2 Peter Paret, "Innovation and Reform in Warfare", The Harmon Memorial Lectures In Military History, 1959-1987, ed. Harry R. Borowski, (Washington D.C.: Government printing Office, 1988), 407.

3 Mark Clodfelter, The Limits of Air Power (New York: The Free Press, 1989), 206-207.

4 Kenneth T. Walsh, "Commander In Chief," U.S. News & World Report, 31 December 1990 / 7 January 1991, 25.

5 Stephen Budiansky, "Lines In The Sands," U.S. News & World Report, 1 October 1990, 29.

6 "War In The Middle East: The President, Military Speak Out," The Atlanta Journal And Constitution, 17 January 1991, A-7.

7 Quote was posted on a wall at Air Command And Staff College, Maxwell AFB, after the Gulf War by an unknown author, March 1991.

8 Thomas Griffith, Gerald Hust, and Jerry Sink, Gulf War fighter aircrews, interview by author, 2-4 March 1992, tape recording, Air Command And Staff College, Maxwell AFB, Ala.

9 "The War In The Gulf," The Montgomery Advertiser, 1 March 1991, 10.

SELECTED BIBLIOGRAPHY

PRIMARY SOURCES: Published.

- Basil, G.I. Pak Six. La Mesa, Ca: Associated Creative Writers , 1982.
- Broughton, Jacksel M. Thud Ridge. New York: Bantam Books, 1969.
- _____. Going Downtown. New York: Pocket Books, 1988.
- Department Of Defense. Pentagon Papers, Gravel ed. Boston: Department of Defense, 1971-1972.
- Halberstam, David. The Best And The Brightest. New York: Random House, 1969.
- Momyer, William W. Air Power in Three Wars. Washington D.C.: Government Printing Office, 1985.
- Nichols, John B., and Barrett Tillman. On Yankee Station. New York: Bantam Books, 1987.
- Sharp, Ulysses S. Grant. Report on the War in Vietnam. Washington D.C.: Government Printing Office, 1968.
- _____. Strategy For Defeat. San Rafael: Presidio Press, 1978.
- Tang, Truong Nhu. A Vietcong Memoir. New York: Vintage Books, 1985.
- United States Congress, Senate. "Vietnam Rules Of Engagement Declassified." Congressional Record (Senate). 99th Congress, 1st Session, 6 March 1985, vol. 131, no.26, pp. S2632-2641.
- _____. "Vietnam Rules Of Engagement Declassified: 1966-1969." Congressional Record (Senate). 99th Congress, 1st Session, 14 March 1985, vol. 131, no. 29, pp. 52982-2990.
- _____. "Vietnam Rules Of Engagement: 1969-1972." Congressional Record (Senate). 99th Congress 1st Session, 18 March 1985, vol. 131, no. 30, pp. S3011-3018.
- _____. "Text of Vietnam Rules of Engagement." Congressional Record (Senate). 99th Congress 1st Session, 26 March 85, pp. S3511-3520.
- Westmoreland, William C. A Soldier Report. New York: Dell Publishing Company, 1980.

PRIMARY SOURCES: Unpublished Reports.

- Air War Symposium, 22nd National Convention Air Force Association. 4 April 1968. Interview 10108, transcript. AFHRA File Number K239.0512-096.

Belli, Robert E. Lt Col. Interview by Lyn R. Officer and Hugh N. Ahmann, 29 January 1973. Interview 645, transcript. Maxwell AFB, Ala. AFHRA File Number K239.0512-645.

Clark, Albert P. Captain. Interview by S.E. Riddebarger, J. Thomas, T.C. Peterson, and K.C. Belt, 12 June 1969. Interview 10136, transcript. AFHRA File Number K239.0512-200.

Headquarters USAF. AFM 1-1: Aerospace Doctrine, USAF Basic Doctrine. Washington D.C.: Government Printing Office, 1964.

_____. AFM 2-1: Aerospace Doctrine, Tactical Air Operations. Washington D.C.: Government Printing Office, 1965.

Headquarters Pacific Air Force. Project Checo Report: Evolution of ROE For SEA. Washington D.C.: Government Printing Office, 1966.

_____. Project Checo Report: SEA ROE 1 Jan 1966 - 1 Nov 1969. Washington D.C.: Government Printing Office, 1969. AFHRA File Number K717.0414-20.

_____. Project Checo Report: Rolling Thunder July 1965 -December 1966. Washington D.C.: Government Printing Office, 1967.

_____. Project Checo Report: Rolling Thunder January 1967 -November 1968. Washington D.C.: Government Printing Office, 1969.

_____. Project Corona Harvest: National Strategy And The Employment Of Air Power In SEASIA, vol 4. Washington D.C.: Government Printing Office, 1970.

_____. Project Corona Harvest: Out Country Air Operations, SEA 1965-1968. Maxwell AFB: Air University Press, 1973.

_____. Project Corona Harvest, US -Vietnam Relations 1945-1967, Rolling Thunder Program Begins. Maxwell AFB: Air University Press, 1973.

Headquarters USAF. Analysis Of Effectiveness Of Interdiction In SEA, Second Progress Report. Washington D.C.: Government Printing Office, 1966. AFHRA File Number K168.187-21.

Moore, Joseph H. Lt General. Interview by S.E. Riddebarger and V. Castellina, 22 November 1969. Interview 7974, transcript. AFHRA File Number K239.0512-241.

Ryan, John D. General. Interview by Richard Clement and John Van Duyn, 20 May 1971. Interview 18618, transcript. Washington D.C. AFHRA File Number K239.0512-476.

Van Gilder, William S. Lt Col. Interview by G. Harrison, 20 June 1968. Interview 100, transcript, Maxwell AFB, Ala.. AFHRA File Number K239.0512-065.

PRIMARY SOURCES: Published Articles.

Butz, J.S. "Airpower In Vietnam: The High Price Of Restraint." Air Force and Space Digest, November 1966, 42.

Clark, Kenneth B. "Sledgehammers And Flyswatter: Air War In Vietnam." Hawk, 1966.

Eaker, General Ira C. "Report From Vietnam Indicate Low Morale." Air Force Times, 24 July 1968.

Powell, Craig. "Airpower In Vietnam Does Support National Aims." Armed Forces Management, February 1967.

Wilson, George C. "Congress Debates Air War Restrictions." Aviation Week and Space Technology, 14 February 1966, 28.

Winston, Donald C. "Bomb Restriction Criticism Has Little Effect On Supplemental." Aviation Week and Space Technology, 20 February 1967, 18.

"Pilot Report From Vietnam." Aviation Week and Space Technology, 19 September 1966, 23.

"B-52 Most Feared Weapon In Vietnam." Aviation Week and Space Technology, 1 May 1967, 55.

SECONDARY SOURCES: Books.

Betts, Richard K., and Leslie H. Gelb. The Irony of Vietnam; The System Worked. Washington D.C.: Brookings Institution, 1979.

Clodfelter, Mark. The Limits of Air Power. New York: The Free Press, 1989.

Lavalle, A.J.C, ed. The Tale of Two Bridges. Washington D.C.: Government Printing Office, 1976.

Lewy, Guenter. America in Vietnam. New York: Oxford University Press, 1978.

Manchester, William. General MacArthur's Return to America. Boston: Little Brown And Company, 1978.

Paret, Peter., The Harmon Memorial Lectures in Military History, 1959-1987. Edited by Harry R. Borowski. Washington D.C.: Government Printing Office, 1988.

Pike, Douglas. PAVN: People's Army of Vietnam. Novato: Presidio Press, 1986.

Schlight, John. The War in South Vietnam. Washington D.C.: Government Printing Office, 1988.

Sun Tzu. The Art Of War. Translated by Samuel B. Griffith. Oxford: Oxford University Press, 1963.

SECONDARY SOURCES: Articles.

Department Of Defense. JCS Pub 1-02, DOD Dictionary of Military And Associated Terms.
Washington D.C.: Government Printing Office, 1989.

Budiansky, Stephen. "Lines In The Sand." U.S. News & World Report, 1 October 1990, 29.

Griffith, Thomas, Gerald Hust, and Jerry Sink, Gulf War Fighter Aircrew¹⁵. Interview by author,
2-4 March 1992, Air Command And Staff College, Tape recording. Maxwell AFB, Ala.

Parks, W. Hayes. "Rolling Thunder and the Law of War." Air University Review, January-
February 1982, 3-9.

Walsh, Kenneth T. "Commander In Chief." U.S. News & World Report, 31 December 1990 / 7
January 1991, 25.

"The War In The Gulf." The Montgomery Advertiser, 1 March 1991, 10.

"War In The Middle East: The President, Military Speak Out," The Atlanta Journal And
Constitution, 17 January 1991, A-7.