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COUNTERINSURGENCY AND AIRPOWER

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ABSTRACT

Most studies of counterinsurgency focus on land forces and neglect the role of airpower. Given the nature counterinsurgency, it follows that ground forces will play the leading role. Airpower, however, has made significant contributions to counterinsurgency in the past and is seeing frequent use in the current conflicts in Iraq and Afghanistan. By examining aspects of counterinsurgency and the evolving role of airpower in war, it is possible to develop a better understanding of how airpower can contribute to success in counterinsurgency. Investing in technologically advanced, multi-role platforms gives modern air forces the ability to adapt their force structure and doctrine to meet the demands of counterinsurgency while maintaining their larger obligation to provide national defence. From the outset, interventionist powers should approach counterinsurgency with the aim of developing indigenous forces, including air forces, as quickly as possible to enable them to defend their own population.

COUNTERINSURGENCY AND AIRPOWER

Introduction

Most studies of counterinsurgency focus on land forces and neglect the role of airpower. Given the nature counterinsurgency, it follows that ground forces will play the leading role. Airpower, however, has made significant contributions to counterinsurgency in the past and is seeing frequent use in the current conflicts in Iraq and Afghanistan. Airpower and counterinsurgency can be seen as being mismatched; airpower offers tremendous destructive power delivered with speed across great distances while counterinsurgency is characterized by the need for patience and restraint, more like police work than war. By examining aspects of counterinsurgency and the evolving role of airpower in war, it is possible to develop a better understanding of how airpower can contribute to success in counterinsurgency.

Looking to historical examples of both successful and unsuccessful counterinsurgency campaigns leads to a dilemma faced by force planners. To ensure national survival, force structures that are designed for high intensity conventional war must be maintained. The demands of counterinsurgency, however, are much different from conventional war. Historical examples show that conventional force structures, employed with doctrine intended to take advantage of its strengths, as in the case of the United States during the Vietnam War, often produce disappointing results. Force structures and doctrine better suited to counterinsurgency, such as that of the British Army in Malaya, have been successful. Force planners are faced with the problem of having to maintain a force structure with capabilities for both conventional and irregular

warfare, including counterinsurgency. This dilemma also applies to airpower force structures.

From its earliest appearance above the battlefields of Europe, the function of airpower in war has been hotly debated. By the end of WWI, all of the modern roles of airpower had appeared in combat. Two themes concerning the function of airpower emerged. From these early conceptions strategic and tactical air forces were built and tested in War. By the end of the twentieth century, rapid and continual advances in technology had produced stunning improvements in airpower capabilities. Early concepts of strategic and tactical airpower had to be reconsidered. Technology allowed so called 'strategic bombers' to directly support ground troops while 'tactical fighters' could attack targets for strategic effect. Advances in technology have made it possible for a wide range of missions to be carried out by a single aircraft type.

For nations that can afford them, modern 'multi-role' aircraft offer a solution to the force structure dilemma. Platforms that are effective in conventional war can be adapted to respond to the particular requirements of counterinsurgency. Advanced systems and adaptable weapons allow air forces to make an increasingly significant contribution in counterinsurgency without reducing their suitability for conventional war. The advantages of airpower can be leveraged to an even greater extent when developed nations intervene to help indigenous forces build their own air capabilities.

The historical prevalence of insurgency and the prevailing global security environment indicate that developed nations will likely continue to intervene in support of foreign governments threatened by insurgency. Counterinsurgency campaigns typically require years to produce lasting results, making it difficult for developed nations

to maintain high levels of direct military intervention. Supporting the development of indigenous forces offers operational advantages in counterinsurgency and is an avenue through which developed nations can contribute their material strength while limiting their exposure to costly foreign military interventions. Building an indigenous air force and helping to develop aerospace infrastructure can help produce significant, lasting results.

CHAPTER 1

Counterinsurgency

Described in a wide variety of ways including small wars, low intensity conflict, and the more popular term guerilla war since Napoleon's experience in the Iberian campaign, insurgency is far from exceptional. In his study of the history of guerilla war John Ellis gives a strong impression of its scope; ". . . guerilla warfare is as old as man himself, and . . . there are countless documented examples of this kind of struggle throughout history."[1] Fortunately for current practitioners of counterinsurgency, this legacy provides considerable knowledge of the enduring characteristics of this type of conflict and many examples of success and failure in dealing with it. The significance of certain aspects of insurgency become apparent when comparing historical examples. Similarly, it is possible to identify characteristics that are common to successful counterinsurgency campaigns. Identifying themes that have proven out over time makes it possible to build effective and appropriate tools for this type of warfare which, as

[1]John Ellis, *From the Barrel of a Gun: A History of Guerrilla, Revolutionary and Counter-Insurgency Warfare, from the Romans to the Present* (London: Greenhill Books, 1995), 11.

counterinsurgency expert Sir Ian Beckett points out, ". . . has always been the most prevalent form of conflict."[2]

One of the most important characteristics of insurgencies is that they are often long, drawn out affairs where progress in containing them is slow and success or failure does not become apparent until years after the initiation of counterinsurgency measures. Particularly for large conventional forces intervening in support of partner nations, the ability to endure long foreign deployments is a significant factor. Modern examples include the French counterinsurgency in Algeria, America's intervention in Vietnam, and the Soviet occupation of Afghanistan. These conflicts, averaging a decade or more of significant effort on the part of the intervening powers, were marked during their course by very few reliable or lasting signs of progress.

There is no arguing that the overwhelming firepower and mobility of modern conventional military forces can effectively suppress insurgencies. The difficulty of intervention with this type of force lies in harnessing its advantages in a way that will contribute to long term stability. In the Battle of Algiers, the French marked a military victory against an insurgency over which it was clearly gaining the upper hand but their success actually worked against the overall counterinsurgency effort. As a result of their use of efficient, but brutal tactics, in the eyes of the indigenous population the French lost their legitimacy to govern. In the United States, when news of the 1968 Tet Offensive flashed across television screens, the American counterinsurgency effort appeared to have made no progress at all despite the fact that the Tet Offensive was a tactical failure for the insurgents. The Soviets in Afghanistan, even after crushing all initial resistance,

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[2]I. F. W. Beckett, *Modern Counter-Insurgency* (Burlington: Ashgate Publishing Limited, 2007), xii.

was faced with a persistent insurgency against which its massive war machine was unable to show enduring progress despite tremendous material advantages. In the current counterinsurgency campaigns in Iraq and Afghanistan, there is general consensus that they too will be protracted affairs where years, if not decades of foreign assistance will be required to establish long term stability.

For liberal democracies the demands of counterinsurgency make direct military intervention particularly difficult to sustain. As Gil Merom explains in his book *How Democracies Lose Small Wars*, the military must recruit from the educated middle class in order to maintain troop strength. Armies of democratic states will inevitably face opposition from the middle class should the level of casualties become significant or the brutality of the war reach a point where it conflicts strongly with societal values.[3] Foreign interventions, such as that of France in Algeria or the United States in Vietnam, are often difficult to defend domestically in terms of necessity. It would have been difficult if not impossible to justify these interventions in terms of national survival. Public opposition is not likely to impact the government's ability to continue the intervention as long as the number of casualties is kept to a tolerable level. The state can reduce casualties by resorting to increased brutality such as when the French in Algeria and the Americans in Vietnam resorted to widespread aerial bombardment. But, there are limits. In both these examples, brutality rose to such a level that it conflicted with societal values and became a catalyst for the destruction of the war effort. The state must reduce the cost of war in terms of casualties but can only do so by increasing the level of

[3]Gil Merom, *How Democracies Lose Small War : State, Society, and the Failures of France in Algeria, Israel in Lebanon, and the United States in Vietnam* (Cambridge: Cambridge University Press, 2003), 230.

brutality which in turn increases domestic opposition to the war. This destructive feedback loop makes decades-long small wars inherently difficult for democratic states to sustain. Merom concludes that for contemporary democracies ". . . military superiority and battlefield advantage have become fruitless, if not counter-productive, in protracted counterinsurgency campaigns."[4] Given that insurgency is historically the most prevalent form of conflict, military forces today must deal with the prospect of fighting long and costly conflicts that the democratic states they represent are not particularly well suited to support.

As Merom argues, certain characteristics of democracies make it difficult for them to engage in costly foreign interventions. Democracies are not unique, however. Nations ruled by other forms of government also have difficulty maintaining foreign military commitments. Attrition eventually forced the Soviet Union to withdraw from Afghanistan. Like the U.S. in Vietnam, when faced with a protracted conflict in which their national survival was not directly at stake, accumulating losses and lack of progress compelled the Soviet government to withdraw its forces. These examples of foreign intervention demonstrate how despite overwhelming military superiority and an abundance of resources, powerful nations were ultimately unable to defeat comparatively weak but persistent insurgents. When challenged by direct foreign military intervention, insurgents have the advantage of time. Long term success against insurgency requires something more than direct foreign military intervention.

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[4]*Ibid.,* 229.

Sir Gerald Templer described in a few words what has become accepted as the ostensible goal of modern counterinsurgency operations: winning hearts and minds.[5] Insurgencies generally develop from the legitimate grievances of some part of the population. The only effective way to deal with the insurgency is to address these grievances in a manner that builds trust and confidence in the government. This points more to the role of police and civil institutions than the military. To maintain legitimacy counterinsurgency forces must avoid the use of excessive or indiscriminate force that will only serve to alienate the incumbent government from the population and lend legitimacy to the insurgents. The appropriate use of military force in counterinsurgency is when the police and civil institutions are overwhelmed. Even then they must use the minimum amount of force necessary. As Anthony Joes wrote; ". . . counterinsurgent victory derives from justice supported by military power."[6] In order to do this in a manner that coherently reinforces the overall counterinsurgency effort military forces must be closely coordinated with the civil agencies they are called on to support.

In his celebrated works, counterinsurgency expert Sir Robert Thompson recognized the importance of civil-military cooperation. He advocated a system where the incumbent government develops an overall plan to coordinate all government agencies to avoid duplication of effort and gaps in the campaign. He went on to say, "It is essential, too, that there should be a proper balance between the military and the civil

[5]Susan L. Carruthers, *Winning Hearts and Minds : British Governments, the Media, and Colonial Counter-Insurgency, 1944-1960* (London: Leicester University Press, 1995), 1.

[6]Anthony James Joes, *Resisting Rebellion : The History and Politics of Counterinsurgency* (Lexington: University Press of Kentucky, 2004), 9.

effort, with complete coordination in all fields."[7] Thompson warned that civilian efforts in areas disputed by the insurgents are "a waste of time and money" if not supported by a military presence to ensure its protection.[8] This can be seen, for example in the Southern and Eastern provinces in the current conflict in Afghanistan where reconstruction efforts such as building and running schools are reversed by insurgents after the protection of military forces is removed.[9] Thompson also related how progress made as a result of military operations, if not followed up by civilian agencies, might not produce lasting results.[10]

Given the nature of insurgency, particularly in an urban setting, an effective intelligence apparatus is of primary importance. The value of accurate and timely intelligence to military operations has long been recognized. Information about the adversary is required for essential activities such as campaign planning, resource allocation and procurement, anticipating the enemy's activities and maintaining the initiative, and to allow for accurate discrimination between friend and foe. In counterinsurgency this can be particularly difficult and time consuming work. The surveillance and infiltration of insurgent networks are often tasks for which police are better suited than military organizations. The civil authorities, as well as cooperating citizens, have important information to contribute to the overall intelligence picture. In so doing close cooperation between civil and military organizations must extend to

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[7]Robert Thompson, *Defeating Communist Insurgency: Experiences from Malaya and Vietnam* (London: Chatto and Windus Ltd, 1966), 55.

[8]*Ibid.*, 55.

[9]The Globe and Mail, "No Canadian guns, no Afghan reconstruction," http://www.theglobeandmail.com/servlet/story/; Internet; accessed 24 April 2008.

[10]Thompson, *Defeating Communist Insurgency*, 55.

intelligence collection, interpretation, and dissemination. Information must be collected from all available sources then brought together where a staff can make sense of it in a timely manner then get the right information in a useable format to the agencies best suited to act on it, be they military or civilian. This was recognized by General Sir Gerald Templer who, as High Commissioner during the Malayan Emergency in 1952, organized the system to enable it to integrate intelligence from all available sources. In Templer's head quarters a combined intelligence staff worked through operations centers set up at various levels of government from state down to ". . . informal civil official-police-military-citizen committees at the local level."[11] Templer's integrated intelligence system was a key enabler of the British counterinsurgency effort.

Resolving internal conflict requires tremendous patience and a doctrine of minimum force. As a result of its imperial history, the British Army developed as an institution suited to long foreign deployments. The Caldwell reforms of the late 19th century resulted in the emergence of the regimental system. Changes were made in the British Army to respond to the requirement to carry out colonial policing in small forces dispersed across the Empire and yet be able to rapidly expand to meet the demands of war on the continent.[12] Despite its participation in war as a large conventional force, the British Army retained characteristics of a small army deployed far from home in a constabulary role. Experience in colonial policing has made the concept of minimum force ". . . a central principle in the British approach to intrastate conflicts, to include

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[11] John J. McCuen, *The Art of Counter-Revolutionary War: The Strategy of Counter-Insurgency* (London: Faber, 1966), 118.

[12]Robert M. Cassidy, *Counterinsurgency and the Global War on Terror: Military Culture and Irregular War* (Westport: Praeger Security International, 2006), 76

peace operations."[13] In the conflict in Malaya, ". . . small units . . . were most adaptable and best suited for prolonged counterinsurgency operations."[14] Advantages ascribed to the regimental system include that it provides the army a connection to British society and gives individual soldiers an enhanced sense of identity in belonging to a particular regiment. Compared to force structures where the individual might identify first with a larger formation such as a division, corps, or army, ". . . British soldiers justify the centrality of the regiment with the proposition that loyalty to the regimental family makes British soldiers continue to perform effectively under duress when otherwise they would not"[15] By having a force structure suited to counterinsurgency the likelihood of success in this type of conflict is greatly increased. Issues relating to force structure are often cited to explanation the difficulty American forces experienced in Vietnam.

The large, highly mechanized, technology driven conventional forces employed by the U.S. in Vietnam after 1965 were structured based on their previous successes in conventional conflict. The U.S. military brought with them to Vietnam a heritage of success in conventional war whose origins and influence can be recognized in the Civil War, WWI, and WWII. In his recent work on counterinsurgency, Robert Cassidy describes how American forces deployed to Vietnam with a force structure optimized for "conventional battlefield overmatch" and a Western military heritage that featured; ". . . a homogeneity of military thinking and doctrine that emphasized conventional battles aimed at the annihilation of similarly predisposed adversaries with similar aims."[16]

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[13]*Ibid.*, 94.

[14]*Ibid.*, 96.

[15]*Ibid.*, 94, 95.

[16]*Ibid.*, 153.

Armed forces are responsible to prepare defenses against any of a number of contingencies. Factors such as the consequences associated with each contingency must be balanced against their likelihood of occurrence. Given that defense requirements will compete with other national priorities, defense planners, like other government departments, have limited resources. Faced with resource limitations and the responsibility to be prepared for conventional war and counterinsurgency, force planners have several options. They could tailor their forces to one contingency, while ignoring the other and accept the implied limitations. They could also choose to have only a portion of their forces specialize in one role in order to strike a balance that would provide the ability to respond to either contingency. These two options are based on the assumption that conventional war and counterinsurgency are so different that they require two exclusive forces to deal with them. One could reject this assumption altogether leaving the option of having one force structure that can be adapted to deal with both contingencies. This is the dilemma the Americans faced when deciding how to fight a guerilla war in Vietnam while maintaining a large conventional deterrent force in Western Europe. Douglas Blaufarb identifies the difficulty the Americans faced in employing their armed forces in Vietnam as a "key military dilemma."[17]

Blaufarb relates how the Kennedy administration proposed that the armed forces, the infantry in particular, make sweeping structural changes to deal with the threat of guerrilla war. Not surprisingly, the Joint Chiefs were reluctant to accept this idea, preferring to adapt existing weapons, training, and tactics to deal with counterinsurgency as an additional capability. Blaufarb describes the government's position as being ". . .

[17] Douglas S. Blaufarb, *The Counterinsurgency Era: U.S. Doctrine and Performance, 1950 to the Present* (New York: Free Press, 1977), 79.

reductive in a military sense. It required a reversion to a simpler form of combat, a stripping down of combat units to the weapons they could carry with them and abandonment of the doctrine of concentration of force in favor of the deployment of numerous platoon-sized units on constant patrol."[18] Opposing this, Blaufarb describes the Joint Chiefs position as; ". . . *additive*. It left the combat division unchanged in organization and equipment but required it to fight in the counterinsurgency mode, when required, *in addition to* its other missions.[19]

Blaufarb goes on to describe how U.S. doctrine, reflecting the desire to employ the strengths of its conventional force structure, impacted the way in which their forces were used in Vietnam. U.S. forces went into Vietnam as counterinsurgents; ". . . dependent upon roads, [using] weapons which would of necessity harm civilians caught in their fire while causing little harm to the nimble guerrillas, and [impacting] massively upon the host society in a way which could not but arouse nationalistic feelings."[20] Blaufarb contends that the U.S. failed in Vietnam not only because their conventional force structure was ill suited to counterinsurgency but also because the composition of the force structure itself influenced how they prosecuted the war.

Force planners trying to prepare for both counterinsurgency and conventional war must make a determination as to whether or not their conventional forces can be effectively adapted to counterinsurgency. Blaufarb ultimately recommends that some units be identified as having counterinsurgency ". . . as a principal, if not exclusive,

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[18]*Ibid.,* 81.

[19]*Ibid.,* 81.

[20]*Ibid.,* 81-82.

responsibility."[21] Extending from Blaufarb's observation that both force structure and doctrine contributed to the U.S. failure in Vietnam, one could also conclude that given the same force structure, different doctrine might have produced better results.

In the battle for hearts and minds it is not mass firepower that is important but the discrete employment of minimum force. The Kennedy administration intended to make sweeping changes to the U.S. Army force structure to make it more suitable for guerilla warfare but institutional inertia proved too great to overcome and no significant changes were made.[22] American efforts in Vietnam failed largely due to a force structure that was particularly ill-suited to the demands of the conflict, coupled with doctrine that reflected a predilection for conventional confrontation. Organizations built for the purpose of wielding the most violence a society can muster will have difficulty in counterinsurgency unless they are adapted for this type of conflict.[23] The American military's cultural aversion to irregular warfare is still a source of difficulty in current counterinsurgency operations in Afghanistan and Iraq.[24]

The employment of indigenous forces can greatly enhance the effectiveness of counterinsurgency operations. Enabling indigenous forces to carry out their own security operations can have an impact disproportionate to the effort expended. The use of indigenous forces offers advantages in gathering and exploiting intelligence, as well as building credibility for the counterinsurgency campaign.[25] These effects can be realized

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[21]*Ibid.,* 82.

[22]*Ibid.,* 82.

[23]Thomas R. Mockaitis, *British Counterinsurgency in the Post-Imperial Era* (Manchester: Manchester University Press, 1995), 143.

[24]Cassidy, *Counterinsurgency and the Global War on Terror,* 35.

[25]*Ibid.,* 128.

at the tactical, operational, and strategic levels of war. Putting a local face on the counterinsurgency effort has an effect on both the population being protected from the insurgents and on the insurgents themselves. From the perspective of the population, indigenous troops have a greater positive impact than receiving the same service from foreigners. From the insurgent's perspective, having the otherwise exclusive advantages of local knowledge and the ability to blend in with the indigenous population turned against them can be particularly unnerving.[26] Insurgents endeavor to attack the credibility of the government in its role as protector. The legitimacy of an incumbent is greatly enhanced when it is seen to be capable of providing security by its own hand.

There are many examples where the use of indigenous forces has greatly enhanced the overall counterinsurgency effort. Robert Cassidy takes the point further in saying that in counterinsurgency, ". . . leveraging partners and local forces to fight a protracted conflict is a *sine qua non* for ultimate success."[27] This contention is reflected in current 'peace through development' doctrines where the build up and employment of indigenous forces is taken as being essential to success.[28] Even when their military effectiveness is inferior to that of their foreign tutors, engagement by indigenous forces contributes more to the overall counterinsurgency strategy than the same action by better equipped and more proficient foreign allies.

Describing the principle goal of a military campaign as winning hearts and minds underlines the fundamental difficulty military organizations face in counterinsurgency. As Thomas Mockaitis concludes: ". . . combating insurgents is not primarily a military

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[26]*Ibid.,* 159.

[27]*Ibid.,* 127.

[28]*Ibid.,* 128.

problem."[29] It is, however, the most prevalent type of conflict and one that there is every reason to expect nations of the developed world to be involved in. History provides indicators of important characteristics of counterinsurgency including that they often necessitate a long term military presence that modern democratic states have difficulty maintaining though direct intervention. The rich British colonial experience offers indicators of what works in counterinsurgency operations including the importance of a doctrine of minimum force, integration of civil and military efforts especially in intelligence operations, and the necessity of matching force structures and doctrine to the task at hand. Finally, the significance of employing indigenous forces in counterinsurgency can hardly be overstated. These factors must be borne in mind by anyone contemplating the difficult but essential task of counterinsurgency.

Two major contemporary examples of foreign intervention, the ongoing operations in Iraq and Afghanistan, began with brilliant displays of airpower that contributed directly to the rapid defeat of conventional forces. This could be seen as capping off a string of victories reaching back to Gulf War I that conferred tremendous prominence on airpower in comparison to land warfare.[30] As the difficult long term nature of these conflicts emerged and the number of casualties among interventionist forces grew, airpower began to be seen as ". . . all but unsuited to the new demands of the moment."[31] Arguments focused on increased troop strength and more "boots on the ground," gained prominence in the search for ways to deal with the difficult situation.

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[29]Mockaitis, *British Counterinsurgency in the Post-Imperial Era*, 1.

[30]Benjamin S. Lambeth, "Counterinsugency in Airpower Thought" in *Aerospace Power and Counterinsurgency. Silver Dart Volume 3. Proceedings of the Air Force Historical Conference and Third Biennial Aerospace Power Forum. (*Winnipeg: Centre for Defence and Security Studies. 2008), 9.

[31]*Ibid.,* 9.

The ongoing debate about the role of airpower in war began almost from its first appearance.

CHAPTER 2

Airpower

Black and white photographs of WWI aircrew throwing bombs from open cockpits show how intuitively airpower emerged from heavier than air flight. Airpower was recognized as inherently offensive even by the earliest theorists, especially Douhet, Trenchard, and Mitchell. In an era of stunning and rapid advances in technology, the novelty of airpower made it difficult to predict what its role in warfare should be. Conceptions of land and naval warfare were guided by millennia of experience whereas airpower, relatively speaking, emerged out of an instant. As airpower capabilities steadily increased and saw widespread application in war, two camps emerged with respect to its use: those who believed it was best employed for strategic effect in its own right and those who saw it as a tactical weapon to be employed in support of other arms.

Even at a time when dirigibles were seen in his country as the aircraft with the greatest military potential, Giulio Douhet predicted that airpower would become strategically decisive in future wars.[32] Douhet's military career spanned the development of airpower from clumsy lighter than air machines through to high altitude fighters and heavy bombers. His first exposure to the use of aircraft in combat was before WWI when Italy went to war against Turkey.[33] Even at this early date, less than a decade after the

[32]Phillip S. Meilinger, *Airwar: Theory and Practice*, (London: Frank Cass Publishers, 2003), 9.

[33]*Ibid.,* 8.

Wright brothers pioneering first flight, aircraft had been used to make direct attacks on ground forces.[34] Reporting on the conflict, Douhet suggested that air units should be established that would exist independently of the Army; a theme that would emerge elsewhere following the rapid technological advances in military aviation in WWI.[35]

Frustrated by what he saw as a defensive attitude that prevented military leaders from seeing the potential of the aircraft, Douhet quit the army and began a career of airpower advocacy. Douhet wrote that aircraft, unhindered by geography, could bypass trench warfare raging on the surface and directly attack the enemy's capacity and will to fight. In a time when wireless communication was considered high technology and radar had yet to be conceived, Douhet saw airpower as being almost impossible to defend against. Ensured of surprise by speed and the vastness of the air, Douhet believed that aircraft could attack an enemy's vital centers directly and break its will to fight thereby forcing capitulation. Douhet proposed that in future conflicts air forces would attack each other's airfields and supporting industries directly to win control of the air, then strike at the opponent's vital centers to secure victory. He concluded that airpower would be the decisive component of military power and that its development should take precedence over all other forms of warfare. According to Douhet airpower would make it possible to avoid attacking an enemy's army and bypass the horrors of an accompanying war of attrition.

Compared to the lack of enthusiasm for an independent air force Douhet faced in Italy, in Britain the Royal Air Force (RAF) emerged near the end of WWI with little

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[34]*Ibid.,* 9.

[35]*Ibid.,* 9.

initial resistance. Formed by amalgamating the air components of the British army and navy, the RAF came into being before the war ended. It was not until resources became scarce in the Interwar period that the youngest of the services struggled to exist.

One of the RAF's first leaders was Major General Hugh Trenchard. In WWI Trenchard was assigned a portion of the available air resources and given the task of attacking German war capacity by taking direct action independent of the army. With his small Independent Bombing Force, Trenchard began what he eventually developed into a doctrine that placed strategic bombing before all other forms of warfare.[36] Initially skeptical about the value of airpower beyond direct support to surface forces, in the Interwar period Trenchard became a leading advocate of strategic bombing.[37]

During WWI Trenchard developed an appreciation of airpower as an inherently offensive weapon.[38] Like Douhet, he believed it was impossible to defend effectively against airpower. For that reason Trenchard believed that the advantage in any future conflict would go to the side best prepared for the offensive and that bomber forces were the most powerful offensive weapon available. Trenchard theorized that the principle target of airpower should be the industrial workforce of the opponent. By attacking the factory workers that were the source of the state's ability to make war, their morale could be weakened. The declining morale of the workforce would bring down with it the morale of the general population leading inevitably to capitulation.[39]

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[36]H. R. Allen, *The Legacy of Lord Trenchard* (London: Cassell & Company Ltd., 1972), 27.

[37]Meilinger, *Airwar: Theory and Practice*, 44.

[38]*Ibid.,* 41.

[39]*Ibid.,* 42.

Honed during parochial infighting in the lean years following the war, Trenchard's argument for strategic bombing included the possibility of avoiding trench warfare by attacking the will of the enemy directly.[40] Following the war, however, arguments dealing with cost took centre stage. In 1924 Trenchard made the argument that bombers could effectively replace battleships in defence of sea lanes at significantly lower cost.[41] Using a similar cost effectiveness argument, he proposed, and to some extent demonstrated in operations, that bombers could replace ground forces engaged in colonial policing.[42] The survival of the RAF as a separate service and the development of strategic bombing doctrine can both be attributed in large part to Trenchard's influence. Arthur Harris, a Trenchard protégé, would carry the strategic bombing concept into WWII as commander of the RAF bomber force.

The American experience of WWI differed in many aspects from that of the Europeans, but the war had a similar impact on the evolution of airpower on both sides of the Atlantic. As in Europe, the armed forces of the United States were quickly drawn down following what many believed to have been the 'war to end all wars.' The military air assets of the United States resided in subordinate formations of the army and navy. Influenced by the thinking of Douhet and more directly Trenchard, William "Billy" Mitchell advanced similar conclusions about airpower for the armed forces of the United States and his philosophy of airpower had an impact on views about how aviation should

[39]*Ibid.,* 41.

[41]Allen, *The Legacy of Lord Trenchard*, 57.

[42]*Ibid.,* 39.

be employed in war.[43] Mitchell championed a strategy of strategic bombing to attack directly at enemy vulnerabilities. He was also an outspoken promoter of having an independent air arm equal, if not superior to the army and navy. Like Douhet and Trenchard, Mitchell saw airpower as being inherently offensive mainly because of the difficulties of defending against it. Mitchell also saw airpower as a way of bringing about quick and decisive results that would avoid the horrific war of attrition on land. Mitchell's personality prevented him from advancing his ideas about airpower to the extent of Trenchard, but he did raise awareness of airpower in the United States and influenced the debate about its place in war.

The theories of Douhet, Trenchard, and Mitchell were all put into practice in WWII. When he took control of RAF Bomber Command in 1942 Sir Arthur Harris inherited not only a highly developed bomber force but the fundamental doctrine upon which it was built. Where Trenchard use theory to argue the case for strategic bombing, "Bomber" Harris made his case in practice when he engaged the RAF against Germany.[44] The United States combined efforts with the RAF in Europe and carried out its own strategic bombing in the Pacific theatre against Japan. Curtis LeMay, Harris' American equivalent, led the American fire bombing campaign against the Japanese home islands. Both Harris and LeMay were unequivocal in defending the practice of bombing enemy population centers. The intent of strategic bombing in WWII, either in whole or in part, was to directly attack the enemy's will and capacity to continue the struggle. WWII provided two test cases for the study of strategic bombing: Europe and the Pacific. Even

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[42] Phillip S. Meilinger, ed., *The Paths of Heaven: The Evolution of Airpower Theory* (Maxwell Air Force Base: Air University Press, 1997), 84.

[44] Allen, *The Legacy of Lord Trenchard*, 96.

before the war ended, the United States began a study of the practical results of putting strategic bombing theory into practice. President Roosevelt directed the establishment of the United States Strategic Bombing Survey (USSBS) and work began to document the effects of the allied campaigns in Europe and the Pacific.

Unfortunately, the results of the USSBS were inconclusive. The survey of the European theatre showed that despite the bombing, German war production continued to increase over the course of the war until its closing stages.[45] The survey does not, however, attribute this directly to the ineffectiveness of the bombing campaign. According to the survey, the inefficiency of top government management resulted in the German economy being "undermobilized" until very late in the war when it became increasingly dispersed and thereby "resilient under air attack."[46] The effect strategic bombing had by diverting resources away from war production and operations to defending against the allied air campaign is mentioned in the survey as having had some value.[47] It has since been argued that this diversion of resources was the bombing campaign's most significant effect.[48] In Japan the survey reported that the isolation of the home islands by naval interdiction had choked off the supply of materials necessary for war production and that had the war continued, the effects of naval interdiction would have significantly reduced Japan's industrial output regardless of strategic bombing. On this point the USSBS concludes; ". . . even without direct air attack on her cities and

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[45]United States, *The United States Strategic Bombing Survey, Summary Report (European War)* (Washington, D.C.: United States Government Printing Office, 1945), 7.

[46]*Ibid.,* 2.

[47]*Ibid.,* 2.

[48]Richard J. Overy and Ian Drury, *Bomber Command, 1934-1945* (London: Harper Collins, 1997), 197.

industries, the over-all level of Japanese war production would have declined below the peak levels of 1944 by 40 to 50 percent solely as a result of the interdiction of overseas imports."[49]

The survey also directly addressed the psychological impact of bombing on the German and Japanese populations. In the case of Germany the survey suggested that the population was ready to capitulate but was prevented from doing so by a "determined police state."[50] The survey makes a similar conclusion in the case of the Japanese; "It is probable that most Japanese would have passively faced death in a continuation of the hopeless struggle, had the Emperor so ordered."[51] As a test of the premise that war could be won by directly attacking the population to break its will to resist, the results of the USSBS were not enough to end the debate.

The American bombing campaigns of the Vietnam War can be seen as another test of airpower theory with respect to strategic bombing. A strategy of "graduated response" was a feature of the opening stages of direct military involvement by U.S. forces. In Operation Rolling Thunder, pressure was applied to the North Vietnamese incrementally through increasingly intense bombing in an effort to coerce them into disengaging from South Vietnam. Rolling Thunder was essentially a strategic bombing campaign with varying restrictions on target selection based on political considerations. Many targets in North Vietnam were placed off limits at the highest levels of the

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[49]United States, *United States Strategic Bombing Survey, Summary Report (Pacific War)* (Washington: United States Government Printing Office, 1946), 15.

[50]United States, *The United States Strategic Bombing Survey (European War)*, 4.

[51]United States, *United States Strategic Bombing Survey (Pacific War)*, 21.

American government out of concern for inadvertently widening the war.[52] Rolling Thunder was followed by the Linebacker campaigns in later stages of the war as direct U.S military involvement was drawn down. Attack restrictions were almost completely removed to the point where bombing could be directed at North Vietnamese industry, infrastructure, and civilian population centers.[53] There is general consensus that the bombing campaign failed to achieve its objectives. The North Vietnamese eventually prevailed but the degree to which target restrictions were responsible is open to debate.

Following the Vietnam War, a belief common among USAF officers held that had the bombing been less restricted the U.S. could have won the war.[54] This belief is reflected in LeMay's claim that an unfettered bombing campaign unleashed at any point could have ended the war in two weeks.[55] Counter to this claim, convincing arguments have been made that even if North Vietnam had been forced to capitulate through an intensive bombing campaign, it might not have prevented the Viet Cong from prevailing in South Vietnam.[56]

The inability of the American bombing campaigns to change the outcome of the war has been argued as resulting from the dual nature of the conflict; it was at once a conventional war between states, and an insurgency. Operation Linebacker II, initiated in

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[52]Robert S. McNamara, *In Retrospect: The Tragedy and Lessons of Vietnam* (New York: Random House, 1995), 245.

[53]Mark Clodfelter, *The Limits of Air Power: The American Bombing of North Vietnam* (London: Collier Macmillan Publishers, 1989), 127.

[54]Earl H. Tilford, *Setup: What the Air Force did in Vietnam and Why* (Maxwell Air Force Base: Air University Press, 1991), 294.

[55]Mark Clodfelter, "Solidifying the Foundation: Vietnam's Impact on the Basic Doctrine of the US Air Force." in *Air Power History: Turning Points from Kitty Hawk to Kosovo,* edited by Sebastian Cox and Peter Gray, 303-317 (London: Frank Cass Publishers, 2002), 306.

[56]Clodfelter, *The Limits of Air Power . . .*, 205.

1972, achieved stunning success against what were essentially conventional forces including regular troops and armor from the North Vietnamese Army. By that time, most of the target restrictions that had hampered previous operations had been removed, permitting attack on a wide range of targets in the North. The peace negotiations that followed are seen as evidence that strategic bombing had the intended effect on North Vietnamese behavior and would have been decisive had it been used with equal ferocity from the outset.[57] The difficulty with this argument is that the war being fought during the Linebacker campaigns was fundamentally different from the war during Rolling Thunder.

Before the North Vietnamese attempt to invade using conventional forces, the war was being carried on by Viet Cong insurgents and regular North Vietnamese troops acting in an insurgent role. Essentially an element of the South Vietnamese population, Viet Cong insurgents could not be engaged decisively with airpower alone. Attempts to use airpower to interdict the flow of supplies from the North along the Ho Chi Mihn trail met with limited success. Air interdiction in the Korean War had produced similar results, and for much of the same reasons. Despite having destroyed an estimated 80% of the supplies moving down the trail, enough made it through for the Viet Cong and North Vietnamese Army to live on.[58] Mark Clodfelter summarized the situation; "Vietnam consisted of two very different types of conflicts fought at different times by different enemies, and air power's ability to achieve success varied in direct relation to the type of

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[57]*Ibid.*, 206-7

[58]Robert C. Owen, "Structuring Global Air Forces for Counterinsurgency Operations" (Winnipeg, Centre for Defence and Security Studies, 2008), 8.

war being waged and who was doing the bulk of the fighting."[59] In *The Limits of Air Power* Clodfelter goes on to argue that even if the North Vietnamese had removed their support and ordered them to stop fighting, the Viet Cong might still have continued their struggle and ultimately achieved the same result; "The cessation of Northern support was no guarantee that Saigon could survive against the Viet Cong."[60]

Looking at the Vietnam War as a test of ideas about strategic bombing, a number of observations can be made. The strategic bombing carried out against targets in North Vietnam during the Linebacker campaigns can be plausibly linked to the North Vietnamese Government's return to the negotiating table. As such, this behavior can be taken as an example of a strategic effect brought about solely through the use of airpower. To balance this claim, however, it must be noted that the impact of the bombing on domestic support for the war was a constant concern for the U.S. government.[61] In a limited war scenario, anything that significantly impacts domestic support creates a strategic effect with serious implications. In addition to impacting the North Vietnamese Government's ability and will to resist, strategic bombing in Vietnam had the potential side effect of impacting the American public's will to continue the war and thereby the U.S. Government's ability to continue its intervention policy in Vietnam.

In contrast to the strategic approach, he use of airpower in support of ground forces emerged very early in the development of manned flight. The first use of aircraft

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[59]Clodfelter, "Solidifying the Foundation . . .," 307.

[60]Clodfelter, *The Limits of Air Power*, 206.

[61]*Ibid.*, 150-151.

in combat was by Italian forces in Tripoli in 1911.[62] From their heritage of artillery spotting with balloons, the Italians employed their aircraft for reconnaissance in support of ground forces. Before WWI airpower offered only a modest capability to deliver weapons against enemy ground forces. By 1914 the British had acquired aircraft with little intention of using them for anything other than reconnaissance. In the early stages of WWI reconnaissance aircraft proved extremely valuable and were credited with playing a key role in thwarting the Schliefen plan by providing early warning of German troop movements.[63] As aircraft capabilities increased during WWI they were employed to attack the enemy behind the lines and in direct support of ground troops engaged with the enemy. These two mission types, interdiction and close air support, came to define the role of tactical support to ground forces.

Viewed as an extension of the surface battle, the Army and Navy maintained direct control of airpower throughout most of WWI. The Royal Flying Corps was a subordinate formation within the British Army and the Royal Naval Flying Service was an integral arm of the Royal Navy. The British had, however, experimented with strategic bombing and carried out air operations independent of the army and navy. In comparison, U.S. bombing forces remained tied to supporting the army in the field for the duration of the war.[64] Although progress had been made in the practice of employing airpower in support to ground forces, before WWII very little official discussion or doctrine development took place between the land and air forces in either Britain or the

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[62]Walter J. Boyne, *The Influence of Air Power upon History* (New York: Pelican Publishing Company, Inc., 2003), 37.

[63]Allen, *The Legacy of Lord Trenchard*, 8.

[64]*Ibid.,* 8.

U.S.[65] There were, however, examples of cooperation between the British Army and the RAF on the edges of the British Empire, far from the parochial in-fighting in London.

Arthur Tedder, who would go on to become Marshal of the Royal Air Force, deployed to Turkey in 1921 in command of a squadron of aircraft in support of the British Expeditionary Force. Necessity demanded close cooperation between the services and Tedder gained valuable experience working with the army. In the same theatre of operations in 1922, Air Marshal Sir Arthur Coningham worked closely with the army performing a number of tasks including close air support and interdiction against Turkish forces. From these experiences Coningham developed an appreciation for the importance of intelligence and close relations with the army. In 1936 Wing Commander John Slessor, who would later also become Marshal of the Royal Air Force, designed and gained experience employing tactics for the support of ground forces during operations in India. Lessons learned were captured in doctrine and later reflected in successful operations in WWII. Tedder received Slessor's writings on army cooperation and remained in close contact with him. The experiences of these RAF officers had a profound an effect on the development of tactical airpower in WWII.

In the opening stages of WWII air support did little to help the British Expeditionary Force and the French Army stop the invading German forces. After the fall of France, a joint staff effort between the RAF and British Army produced doctrine for the employment of airpower in support of ground forces, the Wann-Woodall report.[66] This doctrine featured a system where air assets were divided up at the corps level.

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[65]Brad Gladman, "The Development of Tactical Air Doctrine in North Africa, 1940-43." in *Air Power History: Turning Points from Kitty Hawk to Kosovo,*188-206 (London: Frank Cass Publishers, 2002), 188.

[66]*Ibid.,* 192.

Without access to intelligence above that level, and with no way of effectively coordinating their efforts, the RAF acted as a collection of small air forces tied directly to, and limited by, the narrow influence of corps level command. In this arrangement the RAF was unable to mass against enemy forces or prioritize its response to calls for air support outside of their small areas of responsibility. One 'penny packet' of aircraft might be fully engaged while another sat idle, unable to help. The essential elements of this system, and its serious flaws, reflected demands made by British and U.S. Army Officers during the Interwar years for direct control of air assets. This practice was not changed until 1943 by which time its inadequacies had emerged in practice. The doctrine that replaced it, and turned tactical air support into a success, had its origins in the Interwar colonial experiences of Tedder, Coningham, and Slessor.

The British 8th Army, formed in late 1941 to fight German and Italian forces in North Africa, featured an air force headquarters combined with that of the army. Because of a lack of resources and high demand for air support, air force assets were centrally controlled by an air officer at the combined headquarters. This centralized system, however, proved to have advantages beyond dealing with scarcity of resources.

By virtue of being present at the theatre level headquarters, the air commander gained access to a theatre wide range of intelligence and a greater awareness of the overall situation. This awareness enabled the air commander to prioritize the employment of air forces in support of campaign objectives.[67] In conjunction with the army, targets throughout the theater were assessed and prioritized for attack using airpower. When a particular area of the battlefield required massed airpower, centralized

[67] *Ibid.,* 192.

command and control made this possible. The air commander having access to planning and intelligence at the strategic level made it possible for such a situation to be perceived and interpreted in time for the available airpower to be used decisively. Centralization, ironically, provided a means to achieve flexibility in the use of airpower.

As the 8th Army gained experience in the Western Desert, improvements in command, control, communications and intelligence brought out the strengths of the system. Its effectiveness was finally proven in the victory at El Alamein. Day and night interdiction missions against supply lines and vehicles worked constantly on the effectiveness and morale of German and Italian forces.[68] Combined with close air support, round the clock interdiction helped the 8th Army prevail and demonstrated, particularly to British Army commanders still distrustful of the RAF, that the new centralized system could deliver better air support than the old methods rooted in the pre-war years.[69] Following this experience British air support doctrine was officially changed to codify the improvements. American doctrine would soon evolve along a similar path.

In the early stages of the Allied Campaign in Tunisia, the U.S. Army suffered a crushing tactical defeat at the hands of Rommel's Afrika Korps. Operating in a manner similar to the 1940 methods, tactical airpower was divided up and controlled by subordinate army formations. Allied aircraft were employed flying protective 'air umbrellas' to cover the Army formations they were assigned to protect. Tied to these formations, Allied tactical bombers were reluctant to leave them. Despite an abundance

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[68]*Ibid.,* 194.

[69]*Ibid.,* 196.

of targets vulnerable to air attack, allied air support had become defensive, adding little to the fight.[70]

Following the 1943 Casablanca conference, changes were made to the organization of Allied air power in the North African Theatre. Tedder was given command of the newly formed Mediterranean Air Command that grouped Allied airpower into three combat elements. These included the North West African Tactical Air Force commanded by Coningham. By now an expert in tactical air support to ground forces, Coningham set about bringing the air support system that had proven so successful with the 8th Army to the Tunisian campaign. He convinced General Eisenhower that because of the scarcity of resources, he should allow his close air support aircraft to be pooled under central control where their use could be prioritized.[71] Air force headquarters were collocated with the army and changes were made to the intelligence services to form a system like that of the 8th Army. With the appropriate command, control, communications and intelligence apparatus in place and functioning, aircraft were employed independently of specific ground units. Close air support was provided on a priority basis, but when not in demand aircraft could be used for interdiction. Despite having given up direct control of air assets, army commanders were impressed at the dramatic improvement in the effectiveness of air support in the campaign.[72] The doctrinal changes eventually took hold allowing air power to contribute effectively to the defeat of Axis forces in Northern Africa.

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[70]Clayton K. S. Chun, *Aerospace Power in the Twenty-First Century: A Basic Primer* (Colorado Springs: United States Air Force Academy, 2001), 155.

[71]*Ibid.,* 156.

[72]Gladman, "The Development of Tactical Air Doctrine . . .,"198.

Following the Tunisian campaign, both the British and Americans sent staff to the region to observe and record the revolutionary system that had finally allowed them to successfully combine air power in support of ground forces. Both the RAF and USAAF produced doctrine manuals that codified the new practices. They were later applied in the Normandy campaign and liberation of Europe.

The new doctrine stressed ". . . the equal but interdependent relationship of armies and air forces" and the "inherent flexibility of air power"[73] An important feature common to both the U.S. and British doctrines was the task prioritization set out for tactical air forces. The first priority was to gain and maintain air superiority to shield friendly forces from enemy airpower. Once gained, air superiority allowed tactical bombers to be applied to the second and third priorities: interdiction and close air support.[74] Placing close air support third in the list of priorities did not reflect a reluctance on the part of the air forces to support the army, or a preference for interdiction, but an understanding between the two services that bombing of enemy positions would normally precede land operations. It was equally understood that close air support was only required when the army was actively engaged with the enemy and could otherwise be employed to bring the fight to the enemy through interdiction.[75] The long running debate between army and air force officers over command and control of tactical aircraft and their proper use on the battlefield had been resolved, at least in the context of WWII.

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[73]*Ibid.,* 199.

[74]Chun, *Aerospace Power in the Twenty-First Century . . .,* 158.

[75]Gladman, "The Development of Tactical Air Doctrine . . ., 200.

In the Korean War tactical bombing in support of ground forces was once again tested. With the situation on the ground degenerating into a contest of attrition, extensive air interdiction campaigns were implemented. In successive operations North Korean road and rail networks were systematically attacked in an effort to cut off the flow of supplies southward from China. Despite the tremendous intensity and scale of the bombing, North Korean and Chinese forces were able to maintain an adequate flow of materiel to allow the conflict to continue. This was partly due to a lack of target intelligence and the ability of Communist forces to keep supply lines open by quickly repairing bomb damage or redirecting the flow of materiel to other routes or modes of transport.[76] Perhaps the most significant factor working against the interdiction effort was the relatively small amount of supplies needed to keep the North Korean and Chinese Armies in the field.[77]

The methods used and objectives sought with tactical bombing in the Korean War emerged from a heritage of air support in the North African Desert. Practices developed in WWII were again used, such as deploying forward air controllers equipped with radios to guide close air support and posting air liaison officers to army units to ensure coordination between the services. The most important difference that can be drawn from the Korean conflict with regard to the use of airpower in support of land operations is the effect that interdiction had, or did not have, on enemy forces. Although the effectiveness of close air support was lauded by army officers, the interdiction campaign received criticism for the massive expenditure of weapons in relation to an apparently

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[76]Chun, *Aerospace Power in the Twenty-First Century . . .*, 198.

[77]Stephen Budiansky, *Air Power: The Men, Machines, and Ideas that Revolutionized War, from Kitty Hawk to Gulf War II* (New York: Viking, 2004), 369-370.

small impact on either the enemy's capacity or will to fight. In this respect comparisons could be made between the interdiction effort in the Korean War and strategic bombing in WWII. The Allied bombing campaign against Germany in WWII has also been criticized for the apparent discrepancy between the amount of bombs dropped and their effect on the German war effort.

In the Vietnam War tactical air support was improved through the use of technology but its methods remained essentially the same as that of the latter stages of WWII. American forces actually reversed one of the institutional lessons they had learned about the command and control of airpower in North Africa; economy of force and flexibility could be gained through the centralized control of airpower. Vietnam was divided into geographic areas called route packages. These areas were portioned out to the Navy and USAF who then carried out what were essentially separate air campaigns. This had also been done in the Korean War but in Vietnam the USAF further divided its own efforts along geographic lines. The Seventh Air Force was assigned to targets inside South Vietnam, the Thirteenth Air Force to Thailand, and Strategic Air Command to a strategic bombing campaign.[78] Following the Vietnam War, changes in doctrine returned the USAF to a system of centralized control of air assets under the command of an Air Force Officer; a USAF General was named the Joint Force Air Component Commander (JFACC) in what became known as Gulf War I.[79]

The use of airpower in Vietnam can be seen as the beginning of a blurring of the doctrinal concepts of strategic and tactical bombing. The effects brought by the so-called

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[78]Phillip S. Meilinger, *10 Propositions regarding Air Power* (Washington, D.C.: Air Force History and Museums Program, 1995), 54.

[79]*Ibid.,* 54.

strategic bombing campaigns were actually more tactical in nature. The Linebacker bombing showed that devastating effects could be brought against conventional forces. As in the Korean War, bombing effectively prevented enemy forces from massing for the offensive. Interdiction against supply lines reaching south to support the conventional North Vietnamese Army were highly effective but, as in Korea, had little appreciable effect on the resilient supply lines supporting forces that could continue operating with a low volume of supplies.

Many of the targets included as part of the strategic bombing campaign were also subjected to attack by so called tactical fighters from the USAF, U.S. Navy, and Marines. Conversely, in Operation Arc Light, B-52s were employed in interdiction and close air support. Walter Boyne describes the situation; "While the strategic bombers were flying tactical mission in the South, tactical bombers, Republic F-105s and later McDonnell F-4s, along with Navy attack aircraft, were flying Rolling Thunder's strategic missions against North Vietnam."[80] The blurring of the difference between conceptions of strategic and tactical airpower seen during the Vietnam War was brought on by changes in technology and the impact of political considerations. These two factors combined to change conceptions of what could be accomplished through airpower.

Several significant advances in technology were applied by the USAF during the Vietnam War including precision guided weapons. The reason for developing precision weapons for use in Vietnam was essentially the same as for developing precision for daylight bombing in Europe during WWII. Precision increases effectiveness. With more precise bombing fewer sorties are required to destroy a target. After Vietnam the

[80]Boyne, *The Influence of Air Power upon History*, 331.

availability of precision weapons had other implications. Collateral damage began to have increasingly serious political repercussions. Precision guided munitions were a way of dealing with it. The ability to attack enemy vital centers without coincidentally destroying everything near them meant that strategic bombing could be carried out with relative discretion.

Technical developments seen in the latter stages of the Vietnam War were improved upon significantly in the decades separating it from the next large scale deployment of airpower. In what came to be known as Gulf War I, television audiences were duly impressed by video recordings of direct hits using precision guided munitions. The widespread fielding of these weapons changed perceptions of airpower, even though the majority of ordnance remained unguided 'dumb' bombs. Precision strikes were far different from the carpet bombing of previous campaigns. The viability of strategic bombing was once again an open question. Bombs that could be discretely steered into targets the size of single buildings or vehicles allowed air campaigners to hit an enemy's vital centers very quickly, while for the most part avoiding the collateral damage characteristic of heavy bombardment in previous conflicts. Precision weapons made it possible for airpower to be used in limited wars or to hit strategic targets outside the context of war.

A few years after Gulf War I, airpower was tested in a much different setting: the Balkans. Operation Deliberate Force was launched to coerce the Bosnian Serbs to the negotiating table. It apparently succeeded ". . . after only two weeks without casualties or

collateral damage."[81] Airpower was used in the region again in the same decade in Kosovo where once again airpower played a leading role. It is tempting to point to these successes as examples of the ability of airpower to decide a conflict but the complexity of the Balkans conflict makes such a conclusion seem unlikely, if not facile. Precision weapons made airpower more employable in limited conflicts where collateral damage could have strategic consequences. They did not, however, turn airpower into a weapon that by itself could be decisive.[82] Precision weapons did, however, once again raise the question of what airpower could do and how best to employ it.

In Gulf War II precision weapons were dominant. The Balkan conflicts had shown that it was not enough to have the ability to make precision strikes; extensive intelligence was required to be able to identify targets to allow precision weapons to be used. The selection of targets had always been an important consideration in bombing campaigns but it became even more so during Operation Allied Force in the Balkans; a lack of target intelligence became a major limiting factor. Allied air forces were faced with the problem of having more bombs than targets to use them against. Describing the significance of intelligence to airpower, Phillip Meilinger noted; "[air power and intelligence] are integrally intertwined and have always been so."[83]

During this period of increased emphasis on target selection, new airpower theories were coming into use that sought, once again, to answer the question of how best

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[81]Sebastian Ritchie, "Air Power Victorious? Britain and NATO Strategy during the Kosovo Conflict." in *Air Power History: Turning Points from Kitty Hawk to Kosovo,* ed. Sebastian Cox and Peter Gray, 318-329 (London: Frank Cass Publishers, 2002), 320.

[82]Peter W. Gray, "The Balkans: An Air Power Basket Case?" in *Air Power History: Turning Points from Kitty Hawk to Kosovo,* ed. Sebastian Cox and Peter Gray, 318-329 (London: Frank Cass Publishers, 2002), 342.

[83]Meilinger, *10 Propositions regarding Air Power*, 23.

to use airpower in war. Strategic paralysis theories emerged that described how airpower could be used to rapidly knock out an enemy's command and control systems thereby leaving them in a state of paralysis, unable to effectively defend themselves. Paralysis theories such as Warden's ring theory and Boyd's Observe-Orient-Decide-Act (OODA) loop appeared to have found application in Gulf War II. Iraqi forces were overwhelmed by the coordinated air attack advertised as 'shock and awe.' Although different in many respects from the thinking of early airpower theorists, paralysis theory shared their strategic intent of exploiting airpower to make wars shorter, less costly, and more humane.

When airpower consisted of observation balloons and aircraft barely capable of flight, one could be forgiven for seeing it as little more than interesting hardware. As airpower developed into an indispensable tool of modern warfare, it revealed itself as more significant in its implications, and much more complex than a collection of machines. To clarifying the meaning of airpower Benjamin Lambeth wrote; ". . . in its totality, air power is a complex amalgam of hardware and less tangible but equally important ingredients bearing on its effectiveness, such as employment doctrine, concepts of operations, training, tactics, proficiency, leadership, adaptability, and practical experience."[84]

Appearing early in the development of airpower, by the end of WWII functionally based force structures emerged and took hold in most of the world's air forces. Formations, units and subunits were formed according to aircraft type and function such as, *inter alia*, bomber, fighter, ground attack, and antisubmarine. Although some aircraft

[84]Benjamin S. Lambeth, *The Transformation of American Air Power* (London: Cornell University Press, 2000), 9.

types could be effective in a number of roles such as the British Mosquito and American Mustang, force structures, including weapons and platforms, equipment, maintenance, basing, operational doctrine, and training were concentrated on specific roles. Bomber forces were optimized for bombing, fighter forces for air defense tasks, and attack aircraft for interdiction and close air support. To optimize the effectiveness of airpower resources it was accepted that specific roles should be supported by force structures tailored to each.

Technological developments in the latter half of the twentieth century including the appearance of microcomputers, coupled with the unprecedented high cost of aircraft development and the economic burden of the Cold War arms race set the conditions for maintaining role specific force structures to be challenged. Attempts at fielding "multi-role" aircraft in the 1960s produced disappointing results. The F-111, whose development was championed by Secretary of Defence Robert McNamara, was intended to be a single combat aircraft that could meet the needs of all the services.[85] Although it was eventually developed into an effective strike platform, the F-111 was a dismal failure when measured against McNamara's original intent.

By the 1980s, aircraft became available that could be used effectively in both surface attack and air control missions. Equipped with digital flight controls and advanced fire control systems, aircraft such as the F-16 Falcon and F-18 Hornet could deliver performance that lived up to the description "multi-role." Perhaps more significantly, these platforms and associated weapons were being employed in force structures designed to take advantage of their expanded range of capabilities. The

[85] Stephen Budiansky, *Air Power: The Men, Machines, and Ideas that Revolutionized War, from Kitty Hawk to Gulf War II* (New York: Viking, 2004), 399.

motivation behind these force structures was arguably as much economic as for flexibility in combat. Technology continued to make it possible to expand weapon and platform capabilities, but cost remained a significant factor. The F-35 Joint Strike Fighter currently under development is considered to be a single aircraft type that will finally provide what McNamara was looking for in the F-111, albeit in several variants and at a unit cost that may put it beyond the reach of any but the wealthiest nations.

Moving away from role specialization implies that compromises will be made in terms of performance, not only for the aircraft or platform but also for aircrew and operators. With a wider range of responsibilities, more time and resources are required for personnel to gain and maintain competence. There are limits to the range of diversification that can be expected before competence in specific roles is significantly compromised, or economic advantages are lost. In some instances, national defence requirements can be met but at lower cost by either procuring role specialized equipment with a limited range of uses, or by prioritizing the training and resources dedicated to each role.

Ultimately, to achieve the very best performance in any particular role, force structures must be optimized for it. Modern air forces, however, must be effective in a range of roles from combat with peer adversaries to foreign intervention in counterinsurgency. Specializing in any one role comes at the expense of capability in another and an overall reduction in flexibility. The full range of national security requirements, current and future, must be taken into consideration in the design and

development of airpower force structures. As Robert Owen advises, "Air forces should strive to force structure for the long-run."[86]

CHAPTER 3

Airpower and Counterinsurgency

Airpower can be a very effective weapon when used appropriately. Governments faced with difficult military problems will find in air power the means to deliver force with reach, speed, and the flexibility to deal with rapidly changing situations. However, to take advantage of its strengths, airpower must be used in alignment with larger campaign objectives. In counterinsurgency one has to resolve the apparent contradiction between applying this inherently offensive weapon in conflicts characterized by the need for patience, restraint, and the measured application of minimum force. From its origins airpower was developed for the purpose of achieving quick and decisive victory through the rapid application of devastating firepower. Care must be taken to apply such a force in conflicts that are characteristically long and where success is achieved incrementally over time. Not unlike strong medicine and serious illness, airpower and counterinsurgency must be understood in relative context so that what is intended as part of the cure does not become poison.

Applying airpower in support of counterinsurgency involves the same essential missions as when supporting ground forces in conventional war: interdiction and close air support. The main difference lies in context. The difficulties for an interventionist applying airpower in counterinsurgency are fundamentally the same as when employing

[86]Owen, "Structuring Global Air Forces for Counterinsurgency Operations," 1.

conventional land forces in counterinsurgency. The commitment of forces in direct military intervention must be measured against the willingness of the state to endure the associated cost. Airpower reflects the innovative and technological strength of developed nations and is an avenue by which these strengths can be employed in the defence of allies. Counterinsurgency, however, often requires a type of endurance that these states do not characteristically possess. The most productive way for an intervening state to apply airpower in counterinsurgency over the long term is to enable indigenous forces to apply it themselves. In so doing, some of the inconsistencies between airpower and counterinsurgency can be resolved to allow its strengths, as an extension of the intervening nation's power, to contribute to a long term successful outcome.

Three key areas of concern relating to the application of airpower in counterinsurgency will be addressed here. To begin with, there are general issues relating to airpower and counterinsurgency that apply regardless of the forces involved. In addition to these, specific issues relating to the air forces of developed nations will be addressed. Finally, specific issues concerning the development of indigenous force structures will be dealt with.

When states are failing or have failed, the interventionist will likely have little choice but to opt for direct military intervention. How air forces of developed nations should prepare for and carry out expeditionary support to counterinsurgency operations deserves attention. Any proposal put forward must be consistent with the argument that direct military intervention should be kept as short as possible, but long enough to allow indigenous forces to replace the salient capabilities it brings to the fight.

For interventionist forces, airpower offers the possibility of being less intrusive and thereby potentially less destabilizing than a large deployment of forces in the partner nation. When launched and recovered from outside the conflict area, effects can be delivered while employing a smaller foreign presence, ". . . and may reduce the total number of forces visible to local populations, there by reducing potential resentment."[87]

In building an explanation of how interventionist nations can contribute air power in counterinsurgency, there are areas of concern that apply to both expeditionary and indigenous air forces that must be taken into consideration. Counterinsurgency requires close integration of civil and military operations and intelligence. Air power has specific intelligence requirements that deserve consideration. Command and control arrangements should take into account lessons from the development of airpower including the advantages of centralized control of air power. The ground element, essential to the employment of fire power from the air in counterinsurgency, must be developed as an integral part of the force structure.

The force structure of indigenous air forces, including weapons and equipment, basing and aerospace and communications infrastructure, must be tailored to the specific needs of the host nation. The capacity to procure, operate and maintain an air force need to be considered against overall national security requirements. Finally, the application of air power, like other types of fires, carries risk. In order to advocate the use of air power in support of counterinsurgency, by expeditionary or indigenous air forces, the associated risks must be addressed.

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[87]United States, *Irregular Warfare, AFDD 2-3.* (Washington, D.C., Department of the Air Force, 2007), 15.

After more than a century of development and experience in application, today airpower offers capabilities that can make a significant contribution in counterinsurgency. Amply demonstrated in historical examples, airpower is particularly suited to engaging conventional forces in open engagements, either in close coordination with ground forces or in attacks that support overall campaign objectives. Until recently, airpower has produced mixed results when used against irregular forces. Technological advances, including the appearance of precision weapons has made it possible for airpower to be leveraged against small forces where in the past it would not have been possible.

Referring to recent aerial strike operations in Iraq and Afghanistan, Benjamin Lambeth argues; "The consistent pattern of those operations has . . . been one of coalition airpower repeatedly engaging insurgents in comparatively small numbers, often in ones and twos, both accurately and effectively. . ."[88] Given the capabilities currently available, airpower can be used effectively for interdiction and close air support against conventional and unconventional forces. Robert C. Owen describes what contemporary airpower has to offer in counterinsurgency; "Technically, insurgencies present air forces with an unremarkable set of tactical challenges. The things that air forces do in [counterinsurgency] are largely the things that they do in other forms of conflict."[89]

Given its ability to quickly deliver relatively discriminate yet powerful effects across a wide area, ". . . airpower holds a number of asymmetric trump cards (capabilities the enemy can neither meet with parity nor counter in kind)."[90] For example, a small

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[88]Lambeth, "Counterinsugency in Airpower Thought," 14.

[89]Owen, "Structuring Global Air Forces for Counterinsurgency Operations" 6.

[90]Allen G. Peck, "Airpower's Crucial Role in Irregular Warfare," *Air and Space Power Journal* 21, no. 2 (2007), 11.

group of specialist personnel forming a Tactical Air Control Party (TACP) can access the firepower of any of a number of aircraft orbiting overhead. Through the TACP, ground commanders can call for precision strikes anywhere across a wide area at any time, day or night. These asymmetric advantages are particularly valuable in current interventions such as those in Iraq and Afghanistan where forces are widely dispersed in bases situated throughout the host nation. Today, airpower is more relevant in counterinsurgency than it has ever been. States considering direct military intervention must consider the contribution airpower can make. "For liberal democracies, the human and materiel costs of conducting land operations without effective airpower cooperation are unendurable and unthinkable."[91]

Given that intervention in counterinsurgency is a role that many modern air forces will be expected to do, consideration should be given to how they should prepare for it. As discussed in the previous chapter, to achieve the best performance in any particular role, including counterinsurgency, force structures must be optimized for it. However, air forces represent costly investments in national defence. Few if any nations can afford to invest heavily in air force capabilities uniquely designed for counterinsurgency without putting at risk their other responsibilities. The *raison d'etre* of an air force is to protect the nation from attack and to defend its interests abroad. Expeditionary air forces are structured to be able to respond to a wide range of contingencies, not least of which is conventional war with peer military forces whose strategic implications are of greater potential significance than counterinsurgency. Air forces must strike a balance between those capabilities that are particularly suited to any specific mission such as

[91]Owen, "Structuring Global Air Forces for Counterinsurgency Operations," 9.

counterinsurgency, against their ability to protect national interests and ensure national survival.

The 1980s saw the appearance of technologically advanced multi-role combat aircraft that are truly. Investing in high technology, an area where developed nations are strong, offers the possibility of being able to rationalize the force structure and reduce the number of different aircraft types. Capabilities can be gained through the use of weapons and systems that offer performance advantages specific to counterinsurgency but are generally useful in all types of conflict. For example, close air support is essentially the same task in counterinsurgency as in any other type of war. Sensors with capabilities adapted for close air support in a specific type of terrain will be useable outside the context of counterinsurgency. Weapons such as the small diameter bomb (SDB) offer advantages of particular importance in counterinsurgency; their relatively low explosive yield makes it possible to use SDBs in urban settings and in close proximity to friendly forces.[92] SDBs have characteristics that make them particularly suited to counterinsurgency but that are also widely applicable in other types of conflict. Their reduced weight and size allows more weapons to be carried permitting more ground engagements per aircraft sortie. Similarly, with less weight and drag for the same number of general purpose bombs, increases in aircraft range and endurance can be realized. Aircraft loitering performance is also improved with SDBs.

Given the increased interest in counterinsurgency generated by operations in Iraq and Afghanistan, a persistent belief has emerged that slow, low flying, relatively unsophisticated aircraft are better suited for counterinsurgency than the modern,

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[92]Charles J. Dunlap, *Shortchanging the Joint Fight? an Airman's Assessment of FM 3-24 and the Case for Developing Truly Joint COIN Doctrine* (Maxwell AFB: Air University Press, 2004), 20.

technologically advanced combat aircraft currently in use.[93] Defenders of this position often point to the Vietnam War where propeller driven attack aircraft of Korean War vintage were successfully employed in close air support. Although they proved effective, the older aircraft used in Vietnam did not achieve better results, or suffer fewer casualties than other methods involving the use of state-of-the-art jet aircraft. The motivations behind fielding these aircraft were based on availability and cost. There is a significant capability and survivability gap between low-tech aircraft and modern multi-role platforms. Propeller driven aircraft flying close to the ground can deliver a relatively small load of weapons and are vulnerable to ground fire. Modern high performance platforms equipped with advanced sensors, real time video down-links, and adaptable weapons, bring considerably more weapons and information to the fight and can deliver it from altitudes beyond the reach of groundfire. On this point scholar Robert Owen concludes; ". . . the case for buying low-tech air and support systems to undertake [counterinsurgency] missions on the basis of effectiveness is almost non existent."[94]

Considering force structures for intervening states Robert Owen concludes; ". . . it is always important to remember that the outcomes of insurrections seldom change the character of nations or the balance of international power over the long run, in contrast to conventional inter-state conflicts, which can change the course of history and determine the survival of states."[95] By investing in technologically advanced multi-role platforms that can accommodate adaptable weapons and systems, modern air forces will be able to

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[93]Winds of Change.NET. "The Major's e-Mail; British Close Air Support in Afghanistan Criticized," http://www.windsofchange.net; Internet; accessed 19 February 2008.

[94]Owen, "Structuring Global Air Forces for Counterinsurgency Operations," 12.

[95]*Ibid.,* 11.

respond effectively in counterinsurgency while maintaining the capabilities demanded of their primary duty to provide national security.

In order to employ airpower to contribute to greatest effect in counterinsurgency, it must be integrated into the decision making and information cycle of the overall campaign. For the demands of counterinsurgency, it is not enough to build cooperative, or coordinated entities that otherwise exist in isolation. Counterinsurgency is a complex business. All the effects attributable to the incumbent government including police, civic action, media relations, and military force must consistently reinforce its credibility as a legitimate government capable of defending the interests of the population. Airpower can produce powerful effects that in most circumstances will be attributed to counterinsurgency forces due to their local monopoly on airpower. The impact of this attribution on the government's credibility will be magnified where indigenous forces are involved. With this in mind, command and control of airpower and the associated intelligence services that enable it must be integrated with the overarching counterinsurgency campaign. It is not enough to have airpower on call in support of operations planned in isolation or to employ it in a separate air campaign. If it is to have the greatest effect possible, airpower should not be used like a fire department called in only when its services are urgently needed. Leadership and intelligence services must be part of the ongoing operational and planning cycle so that they have the awareness necessary to ensure that air assets are employed to the greatest effect and in line with the aims of the counterinsurgency effort. This should be kept in mind when designing the command and control elements and intelligence services for a counterinsurgency air component.

The State War Executive Committee (SWEC) system developed under the Command of General Sir Gerald Templer during the Malayan Emergency is an example of integration of command, control and intelligence of airpower assets into the overall counterinsurgency effort;

> "Normally located adjacent to police stations or in some other guarded enclosures, [Combined Intelligence Staff which worked through Combined Operations Rooms to State War Executive Committees] usually were jointly operated by police and military intelligence personnel. . . . these operations rooms were the real nerve centers of Emergency operation. All intelligence – from whatever source – operations plans, situations reports, patrol routes, road blocks, air strikes, and so forth, were channeled through them and plotted. Next to them might be the offices of the Special Branch [Police Intelligence]. Of course, police usually were immediately available. The local army garrisons were near by, closely tied in by telephone or radio. The station was normally hooked into the country-wide police radio net. Not too far off was likely to be a windsock floating over an Auster [light observation aircraft] landing strip or helicopter pad. Hence, the operations rooms greatly increased the opportunity for quick, co-ordinated reaction to any threat or opportunity offered by the terrorists. They ensured that the SWEC system had an operational as well as a planning role."[96]

Owing to the unique demands of air operations, intelligence services tailored to their needs must be available in a combined counterinsurgency intelligence capability. They must be capable of producing target, threat, and coordinating information in a format that is useable for air operations. When integrated into a combined intelligence cell, air intelligence operators are positioned to be able to draw from all the available sources to build an intelligence package suited to target assessment from an air perspective. This enables decisions concerning weapons and effects to be made that are fully informed and in line with the effects of other forces. Integration of air intelligence into a combined counterinsurgency intelligence capability also facilitates the movement

[96] John J. McCuen, *The Art of Counter-Revolutionary War: The Strategy of Counter-Insurgency* (London: Faber, 1966), 187.

of intelligence coming back from sensors and observations made during air operations, as well as informing requests for these capabilities.

Achieving integration of airpower into the counterinsurgency effort requires more than efficient communication. Despite the apparent contradiction, in order to integrate airpower it must be centrally controlled. Integration of the command and control, communications and intelligence elements offers the possibility of producing a synergy of effects while avoiding conflicting effects such as collateral damage and fratricide. Of particular concern when combining airpower and counterinsurgency, command and control must be enabled to prevent over or under-estimating air capabilities and the effects of air weapons. There is no shortage of examples of the misapplication of airpower in counterinsurgency. In the Malayan conflict, over an eight year period one RAF bomber squadron dropped 17,500 tons of ordnance onto jungle canopy for a gain of 16 guerillas killed.[97] An observer likened this misapplication of airpower to "dropping bombs in the sea in the hope of hitting a passing submarine."[98]

Without direction and control from individuals who possess a detailed understanding of the effects and limitations of airpower, there is a risk that it will either be squandered ineffectively or misused resulting in devastating effects that work directly against overall campaign objectives. These concerns point to 'unity of command' from the classic principles of war and more specifically to the doctrinal prescription of centralized control of airpower. Repeated in various examples of modern air doctrine as one of the 'tenets of airpower', centralized control of air assets by an airman; ". . .[a]

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[97]John Newsinger, *British Counterinsurgency: From Palestine to Northern Ireland* (New York: Palgrave, 2002), 55.

[98]*Ibid.*, 55.

person who understands and appreciates the full range of air and space power capabilities and can employ or support some aspect of air and space power capabilities"[99] answers these concerns about the misuse of airpower in counterinsurgency. In current practice this is reflected by the presence of a Joint Force Air Component Commander (JFACC) responsible to provide centralized control of air assets for the Joint Force Commander (JFC). An indigenous air component should be likewise represented at a command level where intelligence is available to provide awareness of the overall counterinsurgency effort.

Ideally, air assets will be linked to a command and control network by secure and reliable voice and data capabilities. In addition to linking command and control entities to air assets, effective communications between operational ground units and the air assets supporting them is an area of concern. Ground units must have appropriate doctrine and training along with compatible communications equipment to enable them to make the best use of airpower.

Given their advantage of operating in familiar terrain, when enabled by effective communications, indigenous ground forces can be particularly adept at the task of guiding air attacks. An example is when the U.S. provided this kind of support to Laotian irregulars during the Vietnam War where; "The air support was of a high standard, due in part to the terrain wisdom of the tribesmen and the excellent communications between ground and air."[100]

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[99]United States, *Air Force Basic Doctrine, AFDD 1*. (Washington, D.C., Department of the Air Force, 2007), 94.

[100]Blaufarb, *The Counterinsurgency Era . . .*, 161.

Indigenous forces employed in counterinsurgency can produce effects that go far beyond their immediate tactical or operational utility. By visibly employing its own people in the fight against insurgents, the incumbent is able to build its credibility as a government capable of providing for the security of the population. First World countries can have a greater overall impact in counterinsurgency by supporting developing nations in their efforts to build the strength and effectiveness their own indigenous forces than when they limit their contribution to direct military support. Airpower is a force multiplier that can have significant direct effects at the tactical level in counterinsurgency when employed appropriately but it can have even greater strategic effects when applied by indigenous forces. In supporting the development of indigenous airpower, contributing states and democracies in particular have an avenue where they can apply their inherent technological and innovative strengths in a way that avoids their characteristic inability to endure in protracted wars where their own interests are not immediately or directly threatened.

States that become involved in building indigenous air capabilities must take into consideration the challenges of developing airpower and the specific circumstances of the conflict. These considerations will be reflected in decisions concerning force structure such as equipment capabilities, maintenance, basing options, training, command and control, communications and intelligence, and the integration of the air component into the larger counterinsurgency effort. Complex platforms and weapons are often beyond the ability of developing nations to acquire or maintain in sufficient quantities to be effective. The host nation's technological and industrial capabilities will also have to be taken into consideration.

The capabilities of an air force are determined to a great extent by the weapons and platforms in its inventory. Equipment must be selected for characteristics that are applicable to the counterinsurgency mission and the circumstances of the particular conflict. Platforms must have sufficient range, speed, endurance, and payload to be effective in the area of operations where they will be needed but they must also be suited to the operating conditions at available bases and reliable enough to inspire confidence. The effectiveness of defensive measures such as armor, expendable decoys, and electronic warfare equipment should be assessed and employed in light of prevailing circumstances. Counterinsurgency missions such as close air support and interdiction require a range of simple yet precise weapons that offer a range of destructive power and can be delivered in various profiles and at varying ranges to allow the user some freedom to make adjustments to the tactical situation and avoid predictability. The ability to operate in various conditions such as at night, in poor visibility, extreme cold or heat, high terrain, intense humidity, high winds, or any other conditions that might restrict the employment of air assets should be taken into consideration to avoid capability gaps that can be observed and exploited by insurgents.

The choice of suitable air assets could be made for considerations based as much on availability as desired characteristics. Platforms, weapons, and systems that are locally available, inexpensive to acquire and maintain, or are familiar to local forces, might well be better suited for an indigenous air force than more technically sophisticated machines with superior performance. There are, however, capabilities that can be added to even the most rudimentary platforms to take advantage of their position above the battlefield.

Secure and reliable communications are indispensable for applying airpower in counterinsurgency. Given their mutual dependence on high quality intelligence, communications must be established and maintained to enable air operations to adjust rapidly to the changing situation on the ground. Their elevation over the battlefield makes air assets ideally located for observation. This can be leveraged by adding cameras and sensors to platforms. The impact of sensors is multiplied when the images they produce are transmitted directly to users at the operational or tactical level in real time. Air assets that are able to do this and deliver effects in direct consultation with ground forces will be able to make full use of the advantages of airpower for counterinsurgency.

For an indigenous air force, the installation of hardware and supporting infrastructure into an effective and efficient communication system is a daunting task but one that allies from developed countries are particularly adept at dealing with. Establishing air communications for an indigenous air arm is an area where foreign allies can make an important and potentially long lasting contribution that takes advantage of their strengths while avoiding their inherent weaknesses. Enabling the air arm to communicate effectively not only enhances its own operational effectiveness, it makes integration into the overall counterinsurgency campaign possible.

Maintenance considerations will also play a role in the selection of equipment for indigenous forces. The aerospace infrastructure available to support military air assets will determine and limit to some extent ambitions for an indigenous air force. Cases where infrastructure is insufficient or does not exist present an opportunity for allies to help in the host nation's economic development. Airlines and other commercial and

government services that use aviation related products and services are enabled by the presence of an aerospace infrastructure. Creating or improving upon existing aerospace maintenance, manufacturing, servicing, or operating capabilities will help develop an industry sector that has wide ranging economic benefits.

Training is an important facet of any air force, no less so for the counterinsurgency role. By its nature aviation is unforgiving of incompetence. Counterinsurgency missions such as close air support typically require a high degree of operator skill. Aviation has very demanding maintenance requirements and is fundamentally dependent on the technical competence of maintenance personnel and the organizations that support them. Training is a force multiplier in that it supports mission effectiveness and reduces unnecessary losses due to accidents and incompetence. A deliberate and well thought out training system is the cornerstone upon which operational success is built. Training infrastructure developed locally with the help of allies has the advantage of contributing to the host nation's ability to build and sustain its defence capabilities. In circumstances where this is not practical, training opportunities can be found abroad. A USAF program currently engaged in rebuilding the Iraqi Air Force, the Coalition Air Force Transition Team, features a significant training component.[101]

Another important consideration for an indigenous air force is basing. Existing airfield infrastructure must be assessed in addition to a myriad of other factors such as geography, the threat, airfield defence, and proximity to the anticipated area of operations and to population centers. The technical requirements of the indigenous air force fleet and that of partner nations will also play a part in decisions concerning basing.

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[101]Robert R. Allardice, Kyle Head, "The Coalition Air Force Transition Team; Rebuilding Iraq's Air Force," *Air and Space Power Journal* 21, no. 4 (2007): 7.

Compared to the long list of possible considerations, viable basing options will likely be limited. Politics, and the time and resources necessary to build airfield infrastructure will undoubtedly factor into any basing decision. A fleet of rugged aircraft capable of operating from austere locations will open more basing options, but this must be weighed against their combat capabilities and the incumbent government's ability to support and defend dispersed operations. Dispersion of air resources can allow them to be placed closer to where they are needed giving them the operational advantage of being able to react more quickly across a wider area and with increased loitering time. Assistance with basing and the associated infrastructure is another way that partners from developed nations can contribute their relative strengths in a way that will have long lasting positive effects on the counterinsurgency effort.

Building an indigenous air force is an excellent medium through which interventionist powers can support a counterinsurgency campaign but it is not without risks and limitations. Principle among these is time. The longer it takes to build and bring to readiness an indigenous air capability, the longer foreign air forces will be required. The competencies needed to support airpower require significant investment and are slow to build. When there is little in the way of existing infrastructure and personnel resources to build upon, foreign support may be required for a considerable period of time. In some cases it might take so long to establish an indigenous air force that by the time it is operational a counterinsurgency air capability might no longer be required. In some circumstances it might be reasonable to anticipate that an insurgency will end inside the time line for development of an indigenous air capability but even in this case the creation and maintenance of such a force has a positive residual effect.

Being in possession of an air capability increases the incumbent government's ability to provide security thereby bolstering its credibility and reducing the likelihood of further challenges to its legitimacy as a defender of the population.

This advantage can be a double edged sword; ". . . the speed and lethality of air operations magnify the potential for doing good or inflicting harm."[102] One of the advantages of visibly employing indigenous forces is that their actions are more likely to be viewed as directly attributable to the incumbent government. The indiscriminate or excessive use of force, including airpower, works opposite the aims of counterinsurgency and with greater impact when responsibility can be directly attributed to the incumbent government. Care must be taken to ensure that targets are positively identified, legitimate according to the rules of engagement in effect, and that the force applied is proportionate. This is true for any application of force but in counterinsurgency, where building legitimacy is a key objective, it can have strategic consequences. Much of the burden of ensuring these factors are in place will rest with the observers, forward air controllers, and intelligence services that airpower and counterinsurgency rely on for their effectiveness.

The possibility of fratricide is a risk associated with close air support. Beyond its immediate destructive effects, fratricide reduces confidence, making troops hesitant to use the firepower at their disposal.[103] This loss of confidence can reflect poorly on the incumbent government, reducing its legitimacy instead of building it. Fratricide might also reflect back on the donor nation, reducing public support for its intervention efforts.

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[102]William B. Downs, "Unconventional Airpower," *Air and Space Power Journal* 19, no. 1 (2005), 20.

[103]"Fratricide," *Dispatches (The Army Lessons Learned Centre)* Vol. 11, no. 1 (October 2005): 7.

Airpower confers considerable advantages in counterinsurgency, but care should be taken to avoid creating an unwarranted dependence on it. Overdependence on airpower might leave counterinsurgents exposed to its limitations in a way that could be observed and exploited by their opponents. Capabilities should be balanced across the force structure to avoid this. Dependence on airpower also implies a dependence on foreign sources of the technology, training, and materiel required to sustain it. Airpower is inherently dependent on technology. Evolving threats might require technological solutions that, like airpower, indigenous forces can only acquire from external sources. Long term support agreements should be factored into the strategic planning of both donor and recipient.

Finally, airpower is not invulnerable. Even the best air forces will take losses due to enemy action and accidents. The loss of expensive or highly visible assets could seriously damage the credibility of both the incumbent government and the intervening state. Insurgents could attempt to leverage the visibility of such losses by targeting airpower. It is incumbent upon all combat forces, including air forces, to ensure they can adequately protect themselves from this, or any other threat to their security.

Conclusion

Land forces play the central role in counterinsurgency and will continue to do so, but the capabilities airpower brings to the fight make it more than worthy of consideration. Airpower offers avenues for intervention that take advantage of the inherent strengths of developed nations. By investing in technologically advanced, multi-role platforms, modern air forces have the ability to adapt their force structure and

doctrine to meet the demands of counterinsurgency while maintaining their larger obligation to provide national defence. From the outset, interventionist powers should approach counterinsurgency with the aim of developing indigenous forces as quickly as possible. The creation of an indigenous air force capable of leveraging the tremendous advantages of airpower in defence of its own population is a worthy goal for the application of airpower in counterinsurgency.

Bibliography

Allardice, Robert R. and Kyle Head. "The Coalition Air Force Transition Team: Rebuilding Iraq's Air Force." *Air and Space Power Journal* 21, no. 4 (2007): 5-14.

Allen, H. R. *The Legacy of Lord Trenchard*. London: Cassell & Company Ltd., 1972.

Beckett, I. F. W., *Modern Counter-Insurgency*. Burlington: Ashgate Publishing Limited, 2007.

———. *The Roots of Counter-Insurgency : Armies and Guerrilla Warfare, 1900-1945*. New York: Sterling Pub. Co., 1988.

Blaufarb, Douglas S. *The Counterinsurgency Era : U.S. Doctrine and Performance, 1950 to the Present*. New York: Free Press, 1977.

Boyne, Walter J. *The Influence of Air Power upon History*. New York: Pelican Publishing Company, Inc., 2003.

Budiansky, Stephen. *Air Power: The Men, Machines, and Ideas that Revolutionized War, from Kitty Hawk to Gulf War II*. New York: Viking, 2004.

Carruthers, Susan L. *Winning Hearts and Minds: British Governments, the Media, and Colonial Counter-Insurgency, 1944-1960*. London: Leicester University Press, 1995.

Cassidy, Robert M. *Counterinsurgency and the Global War on Terror : Military Culture and Irregular War*. Westport: Praeger Security International, 2006.

Chun, Clayton K. S. *Aerospace Power in the Twenty-First Century: A Basic Primer*. Colorado Springs: United States Air Force Academy, 2001.

Clodfelter, Mark. *The Limits of Air Power: The American Bombing of North Vietnam*. London: Collier Macmillan Publishers, 1989.

———. "Molding Airpower Convictions: Development and Legacy of William Mitchell's Strategic Thought." In *The Paths of Heaven: The Evolution of Aipower Theory*, edited by Phillip S. Meilinger, 39-114. Maxwell Air Force Base, 1997.

———. "Solidifying the Foundation: Vietnam's Impact on the Basic Doctrine of the US Air Force." In *Air Power History: Turning Points from Kitty Hawk to Kosovo,* edited by Sebastian Cox and Peter Gray, 303-317. London: Frank Cass Publishers, 2002.

Coram, Robert. *Boyd: The Fighter Pilot Who Changed the Art of War*. New York: Little, Brown and Company, 2002.

Corum, James S. "Airpower Roles and Missions in Counterinsugency." In *Aerospace Power and Counterinsurgency. Silver Dart Volume 3. Proceedings of the Air Force*

Historical Conference and Third Biennial Aerospace Power Forum. Winnipeg: Centre for Defence and Security Studies. 2008.

———. "The Air Campaign of the Present and Future - using Airpower Against Insurgents and Terrorists." In *Air Campaigns in the New World Order,* edited by Allen D. English, 25-42. Winnipeg: Centre for Defence and Security Studies, University of Manitoba, 2005.

Cox, Sebastian and Peter Gray, eds. *Air Power History: Turning Points from Kitty Hawk to Kosovo*. London: Frank Cass Publishers, 2002.

Dean, David J. *Airpower in Small Wars: The British Air Control Experience*. Maxwell Air Force Base: Air University Press, 1983.

Dixon, Howard Lee. *Low Intensity Conflict: Overview, Definitions, and Policy Concerns*. Langley Air Force Base: Army-Air Force Centre for Low Intensity Conflict, 1989.

Downs, William B. "Unconventional Airpower." *Air and Space Power Journal* 19, no. 1 (2005): 20-25.

Dunlap, Charles J. *Shortchanging the Joint Fight? an Airman's Assessment of FM 3-24 and the Case for Developing Truly Joint COIN Doctrine*. Maxwell AFB: Air University Press, 2004.

Ellis, John. *From the Barrel of a Gun: A History of Guerrilla, Revolutionary and Counter-Insurgency Warfare, from the Romans to the Present*. London: Greenhill Books, 1995.

Fadok, David S. "John Boyd and John Warden: Air Power's Quest for Strategic Paralysis." Maxwell AFB: Air University Press, 1995.

"Fratricide." *Dispatches (Army Lessons Learned Centre),* 11, no.1 (October 2005): 1-37.

Galula, David. *Counterinsurgency Warfare; Theory and Practice*. New York: Praeger, 1964.

Gentile, Gian. "Listen to the Airman." *Military Review* 88, no. 2 (March-April 2008): 114-115; http://ebsco.com; Internet; accessed 20 April 2008.

Gladman, Brad. "The Development of Tactical Air Doctrine in North Africa, 1940-43." In *Air Power History: Turning Points from Kitty Hawk to Kosovo,* edited by Sebastian Cox and Peter Gray, 188-206. London: Frank Cass Publishers, 2002.

Globe and Mail, "No Canadian guns, no Afghan reconstruction," http://www.theglobeandmail.com/servlet/story/; Internet; accessed 24 April 2008.

Gray, Peter W. *British Air Power*. London: The Stationery Office, 2003.

———. “The Balkans: An Air Power Basket Case.” In *Air Power History: Turning Points from Kitty Hawk to Kosovo,* edited by Sebastian Cox and Peter Gray, 330-344. London: Frank Cass Publishers, 2002.

Hamilton, Donald W. *The Art of Insurgency: American Military Policy and the Failure of Strategy in Southeast Asia*. London: Praeger, 1998.

Joes, Anthony James. *Resisting Rebellion: The History and Politics of Counterinsurgency*. Lexington: University Press of Kentucky, 2004.

Keaney, Thomas A. "The Evolving and Changing Nature and Meaning of Strategic Airpower." In *Beyond 100 Years of Theory and Practice,* edited by James G. Fergusson, 7-23. Centre for Defence and Security Studies, University of Manitoba, 2005.

Koskinas, Ioannis. "The Combat Aviation Advisory Mission in Iraq." *Air and Space Power Journal* 19, no. 3 (2005): 107-108.

Lambeth, Benjamin S. "Counterinsugency in Airpower Thought." In *Aerospace Power and Counterinsurgency. Silver Dart Volume 3. Proceedings of the Air Force Historical Conference and Third Biennial Aerospace Power Forum.* Winnipeg: Centre for Defence and Security Studies. 2008.

———. *The Transformation of American Air Power*. Cornell Studies in Security Affairs., edited by Robert J. Art, Robert Jervis and Stephen M. Walt. London: Cornell University Press, 2000.

McCuen, John J. *The Art of Counter-Revolutionary War: The Strategy of Counter-Insurgency*. London: Faber, 1966.

McNamara, Robert S. *In Retrospect: The Tragedy and Lessons of Vietnam*. New York: Random House, 1995.

Meilinger, Phillip S., ed. *Airwar: Theory and Practice*2003.

———. *The Paths of Heaven: The Evolution of Airpower Theory*. Maxwell Air Force Base: Air University Press, 1997.

Meilinger, Phillip S. *10 Propositions regarding Air Power*. Washington, D.C.: Air Force History and Museums Program, 1995.

Merom, Gil. *How Democracies Lose Small Wars : State, Society, and the Failures of France in Algeria, Israel in Lebanon, and the United States in Vietnam*. Cambridge: Cambridge University Press, 2003.

Mitchell, William. *Winged Defence: The Development and Possibilities of Modern Air Power - Economic and Military*. New York: Kennikat Press, 1971.

Mockaitis, Thomas R. *British Counterinsurgency in the Post-Imperial Era*. Manchester: Manchester University Press, 1995.

Mrozek, Donald J. *Air Power and the Ground War in Vietnam: Ideas and Actions*. Maxwell Air Force Base: Air University Press, 1988.

Nagl, John A. *Counterinsurgency Lessons from Malaya and Vietnam : Learning to Eat Soup with a Knife*. Westport, Conn.: Praeger, 2002.

Newsinger, John. *British Counterinsurgency: From Palestine to Northern Ireland*. New York: Palgrave, 2002.

O'Neill, Bard E. *Insurgency & Terrorism : From Revolution to Apocalypse*. 2nd ed. Washington, D.C.: Potomac Books, 2005.

Overy, Richard J. and Ian Drury, eds. *Bomber Command, 1934-1945*. London: Harper Collins, 1997.

Owen, Robert C. "Structuring Global Air Forces for Counterinsurgency Operations." In *Aerospace Power and Counterinsurgency. Silver Dart Volume 3. Proceedings of the Air Force Historical Conference and Third Biennial Aerospace Power Forum.* Winnipeg: Centre for Defence and Security Studies. 2008.

Peach, Stuart, ed. *Perspectives on Air Power: Air Power in its Wider Context*. London: The Stationery Office, 1998.

Peach, Stuart and David Gates, eds. *Air Power for the New Millennium*. Lancaster: Centre for Defence and International Security Studies, 1999.

Peck, Allen G. "Airpower's Crucial Role in Irregular Warfare." *Air and Space Power Journal* 21, no. 2 (2007): 10-15.

Pirnie, B.R., A. Vick, A. Grissom, K.P. Mueller, D.T. Orletsky. *Beyond Close Air Support: Forging a News Air-Ground Partnership.* Santa Monica: RAND Corp., 2005.

Pustay, John S. *Counterinsurgency Warfare*. New York: Free Press, 1965.

Rich, Paul B. and Richard Stubbs. *The Counter-Insurgent State : Guerrilla Warfare and State Building in the Twentieth Century*. New York: Macmillan Press, 1997.

Ritchie, Sebastian. “Air Power Victorious? Britain and NATO Strategy during the Kosovo Conflict.” In *Air Power History: Turning Points from Kitty Hawk to Kosovo,* edited by Sebastian Cox and Peter Gray, 318-329. London: Frank Cass Publishers, 2002.

Shultz, Richard H. and Robert L. Pfaltzgraff, eds. *The Future of Air Power in the Aftermath of the Gulf War*. Maxwell Air Force Base: Air University Press, 1992.

Thompson, Robert. *Revolutionary War in World Strategy 1945-1969*. London: Secker & Warburg, 1970.

———. *Defeating Communist Insurgency: Experiences from Malaya and Vietnam*. London: Chatto and Windus Ltd, 1966.

Tilford, Earl H. *Setup: What the Air Force did in Vietnam and Why*. Maxwell Air Force Base: Air University Press, 1991.

United States. Department of the Air Force. *Air Force Basic Doctrine, AFDD 1*. Washington, D.C., Department of the Air Force, 2003.

———. Department of the Air Force. *Irregular Warfare, AFDD 2-3*. Washington, D.C., Department of the Air Force, 2007.

———. Dept. of the Army and United States. Marine Corps. *The U.S. ArmyMarine Corps Counterinsurgency Field Manual : U.S. Army Field Manual no. 3-24 : Marine Corps Warfighting Publication no. 3-33.5*. Chicago: University of Chicago Press, 2007.

———. United States Strategic Bombing Survey, *Summary Report (Pacific War)*. Washington, D.C.: United States Government Printing Office, 1946.

———. United States Strategic Bombing Survey, *Summary Report (European War)*. Washington, D.C.: United States Government Printing Office, 1945.

Van Staaveren, Jacob. *Gradual Failure: The Air War Over North Vietnam 1965-1966*. Washington, D.C.: United States Air Force, 2002.

Vick, Alan. *Air Power in the New Counterinsurgency Era : The Strategic Importance of USAF Advisory and Assistance Missions*. Santa Monica: RAND Corp., 2006.

Walker, John R., ed. *The Future of Air Power*. Surrey: Ian Allan Ltd., 1986.

Warden, John A. *The Air Campaign: Planning for Combat*. New York: toExcel, 1998.

Watts, Barry D. *The Foundations of US Air Doctrine: The Problem of Friction in War*. Maxwell Airforce Base: Air University Press, 1984.

Waxman, Matthew C. *International Law and the Politics of Urban Air Operations*. Santa Monica: Rand Corp., 2000.

Winds of Change.NET. "The Major's e-Mail; British Close Air Support in Afghanistan Criticized." http://www.windsofchange.net; Internet; accessed 19 February 2008.