

# **A Model for Modern Nonlinear Noncontiguous Operations: The War in Burma, 1943 to 1945**

**A Monograph  
by  
Major John Atkins RLC  
British Army**



**School of Advanced Military Studies  
United States Army Command and General Staff College  
Fort Leavenworth, Kansas  
AY 02-03**

Approved for Public Release; Distribution is Unlimited

# REPORT DOCUMENTATION PAGE

Form Approved OMB No.  
0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.

|   |                                    |   |   |  |  |
|---|------------------------------------|---|---|--|--|
| <b>1. REPORT DATE (DD-MM-YYYY)</b><br>22-05-2003  |                                    | <b>2. REPORT TYPE</b><br>monograph                        |   | <b>3. DATES COVERED (FROM - TO)</b><br>18-06-2002 to 22-05-2003                  |  |
| <b>4. TITLE AND SUBTITLE</b><br>A Model for Modern Nonlinear Noncontiguous Operations:<br>The War in Burma, 1943 to 1945<br>Unclassified  |                                    |   | <b>5a. CONTRACT NUMBER</b>  |  |  |
|   |                                    |   | <b>5b. GRANT NUMBER</b>   |  |  |
|   |                                    |   | <b>5c. PROGRAM ELEMENT NUMBER</b>   |  |  |
| <b>6. AUTHOR(S)</b><br>Atkins, John ;   |                                    |   | <b>5d. PROJECT NUMBER</b>   |  |  |
|   |                                    |   | <b>5e. TASK NUMBER</b>  |  |  |
|   |                                    |   | <b>5f. WORK UNIT NUMBER</b>   |  |  |
| <b>7. PERFORMING ORGANIZATION NAME AND ADDRESS</b><br>US Army School of Advanced Military Studies<br>Eisenhower Hall<br>250 Gibbon Ave<br>Fort Leavenworth, KS66027   |                                    |   | <b>8. PERFORMING ORGANIZATION REPORT NUMBER</b><br>ATZL-SWV   |  |  |
| <b>9. SPONSORING/MONITORING AGENCY NAME AND ADDRESS</b><br>,  |                                    |   | <b>10. SPONSOR/MONITOR'S ACRONYM(S)</b>   |  |  |
|   |                                    |   | <b>11. SPONSOR/MONITOR'S REPORT NUMBER(S)</b>   |  |  |
| <b>12. DISTRIBUTION/AVAILABILITY STATEMENT</b><br>APUBLIC RELEASE<br>,  |                                    |   |   |  |  |
| <b>13. SUPPLEMENTARY NOTES</b>  |                                    |   |   |  |  |
| <b>14. ABSTRACT</b><br>The War in Burma is all too frequently forgotten as a source of relevant military experience. Admittedly it did not have the strategic importance of other theatres such as the Pacific or North West Europe, but it did witness some of the hardest and most bitter fighting of the War. Because of the nature of the terrain, limited allied resources and the type of dispersed operations conducted by the enemy, Allied forces were forced to adapt a new method of warfighting to counter these difficulties. The aircraft and the radio revolutionised the way that the campaign was to be conducted. It was discovered for the first time that formations could be dispersed across the battlespace and could fight independently of a ground line of communication. The first formation to prove that this approach was possible was the 77th Brigade, later to earn the title of 'Chindits' and commanded by Brigadier Orde Wingate. Employing Wingate's theories of 'Long Range Penetration' for the first time, the Chindits travelled hundreds of miles behind the enemy's forward positions and attacked his rear areas and lines of communication. Throughout the operation, they received all their supply requirements from transport aircraft and were never in physical contact with friendly forces. The Chindits conducted a truly joint, mobile, nonlinear and noncontiguous operation. Within a year, conventional brigades, divisions and corps of the British Fourteenth Army and the American/Chinese forces in northern Burma were conducting similar operations, this time supported by many more aircraft for both logistic sustainment and fires. Field Marshall William Slim called it a 'new way of fighting' and suggested that four elements contributed to the new concept: joint operations, the use of mission command, the reduction of the 'logistic footprint' of the force to increase tempo, and the conduct of operations by dispersed forces which are tactically independent but focused on operational-level objectives. Although they are not new, nonlinear and noncontiguous operations have only recently become a part of US Joint and Army Doctrine, appearing in FM 3-0 for the first time in 2001. Two examples of nonlinear, noncontiguous warfighting operations are provided in FM 3-0; Operation JUST CAUSE in 1989 and the last 36 hours of the ground campaign of Operation DESERT SHIELD in 1991. A brief study of these operations suggests that they are not ideal examples for modern commanders and planners, nor do they comply fully with the description of nonlinear, noncontiguous operations provided in FM 3-0. Both JUST CAUSE and DESERT SHIELD were concluded very quickly against exceptionally weak opposition. Neither operation employed large-scale aerial resupply operations. More importantly, the forces employed in these operations did not undergo any radical alterations in their organisation, concepts or logistic support structures. The research revealed that the Burma campaign provides a more relevant example for commanders and planners of a mobile, joint, nonlinear, noncontiguous operation. |                                    |   |   |  |  |
| <b>15. SUBJECT TERMS</b><br>Burma Campaign; Burma War; Battlespace; Battlefield; 77th Brigade; Chindits; Wingate, Orde; British 14th Army; Field Marshall William Slim; Joint Operations; Logistic footprint; nonlinear warfighting; noncontiguous warfighting  |                                    |   |   |  |  |
| <b>16. SECURITY CLASSIFICATION OF:</b>  |                                    | <b>17. LIMITATION OF ABSTRACT</b><br>Same as Report (SAR) | <b>18. NUMBER OF PAGES</b><br>62  | <b>19. NAME OF RESPONSIBLE PERSON</b><br>Buker, Kathy<br>kathy.buker@us.army.mil |  |
| <b>a. REPORT</b><br>Unclassified  | <b>b. ABSTRACT</b><br>Unclassified | <b>c. THIS PAGE</b><br>Unclassified                       | <b>19b. TELEPHONE NUMBER</b><br>International Area Code<br>Area Code Telephone Number<br>913758-3138<br>DSN<br>585-3138 |  |  |

SCHOOL OF ADVANCED MILITARY STUDIES

MONOGRAPH APPROVAL

Major John Atkins RLC

Title of Monograph: A Model for Modern Nonlinear, Noncontiguous Operations: The War in Burma 1943 to 1945

Approved by:

\_\_\_\_\_  
Robert M. Epstein, Ph.D. Monograph Director

\_\_\_\_\_  
Robert H. Berlin, Ph.D. Professor and Director  
Academic Affairs,  
School of Advanced  
Military Studies

\_\_\_\_\_  
Philip J. Brookes, Ph.D. Director, Graduate Degree  
Program

## Abstract

A Model for Modern Nonlinear, Non-contiguous Operations: The War in Burma 1943 to 1945.  
A monograph by Major John William Atkins, The Royal Logistic Corps, British Army, 54 pages.

The War in Burma is all too frequently forgotten as a source of relevant military experience. Admittedly it did not have the strategic importance of other theatres such as the Pacific or North West Europe, but it did witness some of the hardest and most bitter fighting of the War. Because of the nature of the terrain, limited allied resources and the type of dispersed operations conducted by the enemy, Allied forces were forced to adapt a new method of warfighting to counter these difficulties. The aircraft and the radio revolutionised the way that the campaign was to be conducted. It was discovered for the first time that formations could be dispersed across the battlespace and could fight independently of a ground line of communication.

The first formation to prove that this approach was possible was the 77<sup>th</sup> Brigade, later to earn the title of "Chindits" and commanded by Brigadier Orde Wingate. Employing Wingate's theories of "Long Range Penetration" for the first time, the Chindits travelled hundreds of miles behind the enemy's forward positions and attacked his rear areas and lines of communication. Throughout the operation, they received all their supply requirements from transport aircraft and were never in physical contact with friendly forces. The Chindits conducted a truly joint, mobile, nonlinear and noncontiguous operation. Within a year, conventional brigades, divisions and corps of the British Fourteenth Army and the American/Chinese forces in northern Burma were conducting similar operations, this time supported by many more aircraft for both logistic sustainment and fires. Field Marshall William Slim called it a "new way of fighting" and suggested that four elements contributed to the new concept: joint operations, the use of mission command, the reduction of the "logistic footprint" of the force to increase tempo, and the conduct of operations by dispersed forces which are tactically independent but focused on operational-level objectives.

Although they are not new, nonlinear and noncontiguous operations have only recently become a part of US Joint and Army Doctrine, appearing in FM 3-0 for the first time in 2001. Two examples of nonlinear, noncontiguous warfighting operations are provided in FM 3-0; Operation JUST CAUSE in 1989 and the last 36 hours of the ground campaign of Operation DESERT SHIELD in 1991. A brief study of these operations suggests that they are not ideal examples for modern commanders and planners, nor do they comply fully with the description of nonlinear, noncontiguous operations provided in FM 3-0. Both JUST CAUSE and DESERT SHIELD were concluded very quickly against exceptionally weak opposition. Neither operation employed large-scale aerial resupply operations. More importantly, the forces employed in these operations did not undergo any radical alterations in their organisation, concepts or logistic support structures. The research revealed that the Burma campaign provides a more relevant example for commanders and planners of a mobile, joint, nonlinear, noncontiguous operation.

## Acknowledgements

I am especially grateful to Mr Ray Clayton, a veteran of the 14<sup>th</sup> Army. Mr Clayton served as a junior infantry officer with the Somali Battalion of the 28<sup>th</sup> Independent East African Brigade in Burma in 1944 and 1945. The Brigade served as part of the deception operation that assisted the 14<sup>th</sup> Army's crossing of the Irrawaddy River in 1945. The 28<sup>th</sup> Brigade was in combat continuously for 5 months before being withdrawn. After the War he graduated from Cambridge University and then taught Geography at the Portsmouth Grammar School, southern England, where I was fortunate enough to be one of his pupils. He often spoke of his experiences in Burma and his many anecdotes served to inspire me to study the Burma campaign in greater detail. I met with him again in December 2002 (he was then aged 80) and he helped to paint a superb picture of the operations conducted by his Brigade, and of the terrain and the conditions that prevailed during that period of the campaign. I am indebted to him.

I would like to thank Dr Robert Epstein for his guidance during the production of this monograph. My thanks also go to my Wife, Aly, for her patience and encouragement, for reading and re-reading my drafts and for providing such sound advice and endless cups of tea.

## TABLE OF CONTENTS

|   |    |
|---|----|
| <a href="#">TABLE OF CONTENTS</a> .....     | iv |
| <a href="#">INTRODUCTION</a> .....          | 1  |
| <a href="#">CHAPTER ONE</a> .....           | 10 |
| <a href="#">CHAPTER TWO</a> .....           | 25 |
| <a href="#">CHAPTER THREE</a> .....         | 35 |
| <a href="#">CONCLUSIONS</a> .....           | 52 |
| <a href="#">BIBLIOGRAPHY</a> .....          | 57 |
| <a href="#">BOOKS</a> .....                 | 57 |
| <a href="#">DOCTRINE PUBLICATIONS</a> ..... | 59 |
| <a href="#">PERIODICALS</a> .....           | 59 |

## INTRODUCTION

In 1995 the terms “noncontiguous” and “nonlinear” were introduced into Joint Publication 3-0 (JP 3-0), Doctrine for Joint Operations. They were introduced into the US Army’s FM3-0 doctrine manual in 2001, but the concepts of “noncontiguous” and “nonlinear” operations were not new. Amphibious operations and, since the 1930’s, airborne operations have provided clear examples of modern nonlinear operations. The Germans conducted nonlinear operations during their invasion of Norway in 1940, combining amphibious and airborne attacks against a number of geographically dispersed objectives almost simultaneously. There are also examples of land-based operations that have been nonlinear in nature. Many of the operations in the Egyptian and Libyan deserts during World War Two were nonlinear, separate armoured and motorised columns, supported by tactical airpower, manoeuvred across the desert, paying little attention to their lines of communication or their geographic position relative to other friendly units<sup>1</sup>.

FM 3-0 cites the 1989 US invasion of Panama and the last 36 hours of the ground war in Operation DESERT STORM as examples of nonlinear, noncontiguous warfighting operations (as opposed to Stability and Support Operations (SASO)). Both of these operations took place relatively recently and therefore serve as reasonably sound examples of nonlinear and noncontiguous operations to current US Army planners and junior officers. In both operations, however, the forces involved were confined by concepts, organisations and logistic support structures that would not allow them to fully exploit the potential of the dispersed battlespace. In addition, neither operation was fought against particularly strong or determined opposition, nor were they sustained for any more than ten days. The US committed several formations to Operation JUST CAUSE but, in contrast to the length of the Burma campaign, combat operations only lasted 5 days. The forces, particularly the G3 and G4 planning staffs, did not have to wrestle with the problems that were continually faced by the Allied planning staffs

---

<sup>1</sup> General O’Connor’s offensive into Cyrenaica in 1941 is a particularly good example.

in Burma over weeks, months and even years of campaigning<sup>2</sup>. Neither did they have to compete for resources with other theatres.

The modern US Army, like the Allies in World War Two, now finds itself in the midst of a global war with simultaneous operations being conducted in several theatres. As a result of the speed of the enemy collapse in both DESERT STORM and JUST CAUSE, commanders and planners were not forced to change their conceptual approach to warfighting. By contrast to the two modern examples in FM 3-0, the Burma campaign provides commanders and planners with a more relevant and more challenging example of a sustained, Joint, Combined, nonlinear, noncontiguous warfighting operation for large-scale light and medium forces.

The traditional view of spatial organisation on the battlefield is of a contiguous, linear organisation with a clear “Frontline”. This idea of the “Frontline” has been in use for some time, particularly since the First World War, and is still used today by elements of the military and the media<sup>3</sup>. In this construct, each formation has an area of operations (AO) that borders onto another formation’s AO. The forward edge of this line of AOs constitutes the Forward Line of Own Troops (FLOT). Behind the FLOT are the lines of communication along which the army is sustained<sup>4</sup>. The modern military term that is used to describe this kind of spatial organisation is “contiguous operations”<sup>5</sup>. The concept of contiguous operations has developed as a part of warfare over the last two centuries. Its

---

<sup>2</sup> An additional burden in extended campaigns in environments such as Burma, which is often not considered in short-term campaign, is the increased wastage due to disease and the need to evacuate the sick alongside soldiers who were wounded in action. The worst monthly casualty rate recorded by Commonwealth forces was nearly 70,000 in June 1944. Only 3,000 casualties were due to military action. Approximately 36,000 casualties were due to malaria alone. Earl Mountbatten. *Report to the Combined Chiefs of Staff by the Supreme Allied Commander South East Asia, 1943-1945* (London: His Majesty’s Stationary Office, 1951), 249. Modern medicine (and future medical developments) will undoubtedly reduce this burden, however, it must still be considered in this context. An equally high casualty or sickness rate might be incurred in the future, particularly if chemical or biological weapons are used against US forces.

<sup>3</sup> The term “frontline soldiers” is often applied to the infantrymen, tank crews and sometimes aircrew and artillerymen who fight with the enemy in the close battle. “Rear Area” troops are understood to be soldiers that provide logistic support to the frontline troops and do not take part in the close battle.

<sup>4</sup> Lines of Communication are, “all the routes, land, water, and air, which connect an operating military force with a base of operations and along which supplies and military forces move” (JD Encyclopedia page 463).

<sup>5</sup> United States Army. *FM 3-0: Operations* (Washington DC: Headquarters, Department of the Army, 2001), 4-20.



origin lies in the mass armies that were raised during the French Revolutionary Wars. The movement to mass citizen armies continued throughout the nineteenth century and contributed ultimately to the stalemate of the First World War; because of their sheer size, the opposing forces were drawn up in a continuous “front” from the borders of Switzerland to the Belgian coast. Operations in a number of theatres during the Second World War (e.g. the Italian “front”) and the Korean War were also conducted in a contiguous manner. This type of battlefield organisation is also by definition “linear”. US Joint Doctrine explains the concept of linearity:

Linearity refers primarily to the conduct of operations along lines of operations with identified FLOTs. In linear operations, emphasis is placed on maintaining the position of the land force in relation to other friendly forces. From this relative positioning of forces, security is enhanced and massing of forces can be facilitated. Also inherent in linear operations is the security of rear areas, especially lines of communication (LOCs) between sustaining bases and fighting forces<sup>6</sup>.

The First World War provides an excellent example of linear operations, particularly on the Western Front from late 1914 to early 1918. Linear operations were necessary, not only because of the large masses of troops involved, but also because of the huge quantities of supplies needed (especially ammunition). The slow pace of resupply did not allow for rapid tactical or operational movement and therefore fixed defensive lines were required to protect the vulnerable LOCs.

There were exceptions to the rule. The amphibious landings at Gallipoli in 1915, at least in conception and initial execution, were bold, nonlinear operations. General MacArthur’s amphibious landings at Inchon in the Korean War were not contiguous with the UN force in the Pusan perimeter and used a nonlinear approach. The Soviets successfully developed a nonlinear, noncontiguous approach to operations during the Russian Civil War. Red Cavalry units especially were used as separate columns to operate over large areas with little regard for their own flanks. And in South East Asia in 1941 to 1945, the Japanese, and later the Allies, conducted nonlinear, noncontiguous operations against forces that had

---

<sup>6</sup> Ibid., 464.

ties their Lines of Operation to their ground lines of communication. The Allies' successful attempt to overcome this Japanese method of warfighting in Burma is therefore the case study for this paper.

The Burma campaign has been chosen because it is an example of a large-scale noncontiguous and nonlinear operation in a combined and joint war-fighting environment. Of particular importance is the reliance on airpower for close support and logistic support of the ground forces; perhaps the first and only time that dispersed formations have manoeuvred and fought for extended periods while receiving the majority of their supplies from the air. The campaign was also fought over complex and varied terrain. The classic image of operations in South East Asia is of jungle warfare. Certainly, the majority of operations in this area were performed in mountainous jungle. But large areas of Burma, particularly the Schwebo plain, are open with sparse vegetation and little surface water. The majority of the population were scattered across the countryside in small villages, surviving on subsistence agriculture, but there were also some urban centres, such as Mandalay, Meiktila and Rangoon, in which operations took place. The campaign was not purely a ground operation; it involved large-scale air, airborne and amphibious operations, and therefore required close cooperation between the ground, air and naval forces. The variety of terrain also creates a case study that relates to many potential theatres of operation.

It is important, but fairly obvious, to note that there are some important differences in the technological development of today's forces when compared to the forces operating in Burma in the 1940s, 60 years ago. The speed of operations could not be as high because in many cases operations were limited to the pace of a man walking with a mule. In these cases, however, it should be noted that the enemy was equally constrained in terms of tactical mobility. Under such circumstances it is more important to discuss the tempo of operations, rather than speed. Tempo is, "a measure of the extent to which the potential speed of a formation or unit is exploited *relative to the enemy*"<sup>7</sup> (emphasis mine). The successful force will invariably be the one that is able to move and act more quickly than the enemy. But not all operations were based on foot soldiers and their animal transport. The allies increased their

tactical and operational mobility by the extensive use of airpower for the transportation of both troops and supplies. Whenever the situation allowed air transport was used to rapidly reinforce isolated locations and to exploit success.

General (later Field Marshall and Viscount) William Slim was the commander of the majority of the ground forces throughout the campaign. In his book *Defeat into Victory*, Slim assessed the reasons for fighting in a dispersed manner.<sup>8</sup> He used the term “dispersed fighting” to describe the noncontiguous nature of operations and proposed three possible reasons for dispersal “...the terrain, the lack of supplies, or the weapons of the enemy...”<sup>9</sup>. These factors will apply equally to future operations. Additional factors that will contribute to dispersion on the battlefield are political and economic considerations (e.g. spiraling defence costs, unwillingness to maintain large standing armies, casualty aversion) and the changing threat environment (e.g. asymmetric opponents, terrorism). For these reasons it has become either expedient or desirable to disperse forces across the theatre of operations.

The definition of nonlinear and noncontiguous operations in FM 3-0 certainly did not find its genesis in the Burma campaign. The concept of nonlinear, noncontiguous operations, as defined in US doctrine, appears to be based on an amalgam of ideas developed in the early 1990s as “AirLand Battle Future”<sup>10</sup>. FM 3-0 describes the concept as follows:

5-49. In *nonlinear operations* maneuver units may operate in noncontiguous areas throughout the AO (Area of Operations). Even when operating in contiguous AOs, maneuver units may orient on objectives without geographic reference to adjacent forces. Nonlinear operations typically focus on multiple decisive points. Simultaneity overwhelms opposing C2 and retains the initiative. Nonlinear operations proceed along multiple lines of operation – geographic, logical, or both. LOCs (Lines of Communication) often diverge from lines of operation and sustaining operations may depend on CSS moving with maneuver units or delivered by air.

---

<sup>7</sup> British Army. *Design for Military Operations – The British Military Doctrine* (London: Her Majesty’s Stationary Office, 1996), 4-24.

<sup>8</sup> *Defeat into Victory* describes the campaign in Burma from the retreat in 1942, through to the eventual recapture of Rangoon, the main port of Burma, in 1945. Slim commanded the 1<sup>st</sup> Burma Corps during the retreat and later went on to command the 14<sup>th</sup> Army and ultimately Allied Land Forces South East Asia.

<sup>9</sup> Field Marshall William Slim. *Defeat into Victory* (London: Cassell, 1956), 549.

<sup>10</sup> General John Foss, “Advent of the Nonlinear Battlefield, AirLand Battle Future,” *Military Review* (January 1991): 20- 35.

5-50. Smaller, lighter, more mobile, and more lethal forces sustained by efficient, distribution-based CSS systems lend themselves to simultaneous operations against multiple decisive points. Situational understanding, coupled with precision fires, frees commanders to maneuver against multiple objectives. Swift maneuver against several decisive points – supported by precise concentrated fire – induces paralysis and shock among enemy troops and commanders.<sup>11</sup>

It is interesting, however, that Slim's description of the "new kind of warfare" that was developed in Burma, has many similarities to the description of nonlinear and noncontiguous operations now provided in US Army doctrine. Obviously there are certain modern terms that Slim would not be familiar with. The terms nonlinear operations and noncontiguous operations were never used during World War Two. Rather than use the term noncontiguous, Slim uses the word "dispersed"<sup>12</sup> to describe the spatial organisation within the theatre. It is strange that Slim and other authors of the period, although they understand the concept of the dispersed battlefield, also use the term "front line". This phrase tends to suggest, rather erroneously, that operations were "linear" and "contiguous". This is presumably because the term had been used widely both during and after the Great War<sup>13</sup>. Jomini's concept of "Decisive Points" might also have been understood by Slim but he does not use it (despite the fact that he had been a student at the Indian Army's Staff College and a former instructor at the British Army Staff College, Camberley). "Situational understanding" is a modern phrase but Slim, and his subordinate commanders, would have received this through their "intelligence" cells and their own understanding of the ground.

Slim understood that, "modern war, with its destruction of bases, disruption of communications, and disorganisation of control, will, if they are to operate at all, compel armies to disperse."<sup>14</sup> He then provides a list of characteristics that describes the new form of dispersed warfare developed in Burma:

---

<sup>11</sup> United States Army. *FM 3-0: Operations* (Washington DC: Headquarters, Department of the Army, 2001), 5-11.

<sup>12</sup> Field Marshall William Slim. *Defeat into Victory* (London: Cassell, 1956), 549.

<sup>13</sup> Many of the senior Allied leaders in Burma, including Slim, were Great War veterans.

<sup>14</sup> Field Marshall William Slim. *Defeat into Victory* (London: Cassell, 1956), 549.

- (i) The acceptance as normal of the regular movement and maintenance [provision of CSS] of standard formations [conventional corps, divisions and brigades] by air.
- (ii) Great tactical freedom for subordinate commanders.
- (iii) The operation, over wide distances in most difficult country, of comparatively small forces in tactical independence but strategic cooperation.
- (iv) Reduced scales of transport and equipment, supplemented by ingenuity and improvisation from local resources.<sup>15</sup>

It is relatively simple to translate this list into the modern terms used in FM 3-0. Point (i) is fairly self-explanatory, and implies a degree of “Joint-ness”, but to the soldiers of the Second World War it was a relatively new concept. Point (ii) refers to the “mission-command” climate that Slim encouraged within his force. He explained later that subordinate commanders were given their commander’s “intent” for a particular operation and were then allowed to execute their own plan. Point (iii) discusses the dispersed, noncontiguous nature of the campaign; fighting independently but in operational cooperation. Slim appears to use the term “strategic” to refer to what is now called the “operational” level of war. Finally, point (iv) discusses what is now understood as a smaller “logistic footprint”, which should allow “smaller, lighter, more mobile” forces to conduct “swift maneuver.”<sup>16</sup> These characteristics will be used as themes for further study.

The term “model” can often be associated with scientific prescription. In this case the model provides an example that will highlight a broad range of positive and negative issues that are of value to modern planners and commanders. The War in Burma, as it was planned and executed, was certainly not perfect. Many mistakes were made throughout the various campaigns. It took many months of trial and error to realise the importance of, for example, joint operations in this type of dispersed AO. A Joint headquarters was eventually established at the Theatre level. This practice was then progressively continued down to Divisional level in some cases and Joint liaison elements were pushed down even further in the chain of command. Joint training was improved and intensified as the ground forces’

---

<sup>15</sup> Ibid.

<sup>16</sup> United States Army. *FM 3-0: Operations* (Washington DC: Headquarters, Department of the Army, 2001), 5-11.

reliance on airpower grew. What was always lacking was a truly Joint education system. If the modern US Armed Forces are to avoid similar mistakes and be prepared *in advance* for nonlinear, noncontiguous operations, then Joint education, training and permanently established Joint headquarters should become the norm.

The monograph is divided into 3 chapters. In all three chapters the characteristics of the dispersed battlespace, which were identified by Slim, will be used as themes for the study of operations. In addition to Slim's characteristics, research has identified a number of other themes that have a different emphasis on the nonlinear, noncontiguous battlespace. These themes are the protection of the exposed flanks and rear of the force, the military employment and protection of the local population and the maintenance of morale on the dispersed battlefield. All of these themes raise issues for modern strategic, operational and tactical level commanders and planners.

Chapter 1 examines the development of nonlinear and noncontiguous operations in Burma through a study of the so-called "Long Range Penetration Groups" (LRPGs). Separate units were formed specifically to put the theory into practice. These units were known collectively as the Long Range Penetration Groups, but colloquially as the "Chindits" and "Merrill's Marauders". Their deep operations were conducted simultaneously and in cooperation with the operations of the main allied armies. In Chapter 2, the themes are carried forward into a study of selected offensive and defensive operations by the "conventional" light and medium formations and Allied air forces operating in Burma in 1944-'45. These campaigns involved Allied Joint forces operating in dispersed formations, over extended Lines of Communication and across a seven hundred mile arc of complex terrain. The final chapter applies the same themes to a brief study of the 1989 Panama intervention and the last 36 hours of operations in the 1991 Gulf War. In an effort to provide a more complete picture of operations on the dispersed battlespace, the third chapter will also examine other issues that were faced in the War in Burma but were not experienced in Panama or the Gulf. A relative assessment will be made to determine the relevance of

the War in Burma as a model for modern noncontiguous, nonlinear operations, as they are defined in FM 3-0, and recommendations will be made for the future.

## **CHAPTER ONE**

### **LIGHT FORMATIONS ON THE DISPERSED BATTLEFIELD: THE LONG RANGE PENETRATION GROUPS, 1943 TO 1944**

The operations of the Long Range Penetration Groups in 1943 and 1944 provided an early example of the characteristics of the nonlinear and noncontiguous operations. These formations, raised using guidelines established by the British General Orde Wingate, were seen by many contemporary officers as “unconventional” or guerrilla forces, to be sent on deep raiding missions into the enemy’s rear. That their operations were unconventional is beyond doubt, especially when they are compared with other regular Allied formations operating in the European theatre. General Slim, amongst others, compared them to the cavalry raiders of the American Civil War. Wingate himself may have been inspired by the exploits of Mosby’s or Grierson’s raiders. He had already conducted counter-terrorist operations in pre-War Palestine, and large-scale guerrilla-type operations in Ethiopia before he was sent to Burma in 1942. But to suggest that the Long Range Penetration Groups conducted guerrilla operations is too simplistic a view of their operations. The term “Long Range Penetration” might also suggest that their activities were simply “Deep” operations and that they would therefore fit into the “linear, contiguous” spatial model described in chapter 4 of FM 3-0<sup>17</sup>. Although formation boundary lines were drawn on the map of Burma the formations did not operate contiguously. They were spread over a 700-mile arc from the coast of Burma to the border with China. Within the LRPGs themselves there were a number of noncontiguous “columns” and formations (companies, battalions and brigades) operating independently of one another against separate objectives, or decisive points, but with a common purpose. The framework for studying the LRPG’s operations is based on Slim’s description of the “new kind of warfare” but using the terminology of FM 3-0: the application of Joint Operations, the use of “mission command” and extension of tactical freedom to subordinate commanders, dispersed but operationally coordinated tactical operations without mutually protected flanks (and the problems associated with it such as the

---

<sup>17</sup> United States Army. *FM 3-0: Operations* (Washington DC: Headquarters, Department of the Army, 2001), 4-26.



maintenance of morale) and the reduction of the “logistic footprint” to enhance mobility and manoeuvre. Any study of the L RPGs will necessarily require a brief examination of the military experience of their creator, Major General Orde Wingate, and a little background on the situation in Burma in 1943 and 1944.

Orde Wingate (1903 to 1944) had already become somewhat of a military celebrity in Britain prior to 1943. He had a leading role in liberating Ethiopia from the Italians in 1941. He had raised and trained a force of Ethiopian patriots and lead them in a campaign against Italy’s colonial forces. What Wingate had in mind in Burma was, according to Bierman and Smith, “something more akin to the cavalry raids of the American Civil War whereby regular troops penetrated enemy territory to wreak havoc behind his lines.”<sup>18</sup> Bernard Fergusson<sup>19</sup>, who was a member of the Joint Planning Team in Delhi, met Wingate prior to the acceptance of Wingate’s initial plan. Fergusson was later to command a column during the first “Chindit” expedition and a brigade in the second. He explained in his memoirs the basis of Wingate’s theory: the enemy’s vulnerable rear areas were to be attacked by groups of conventional light forces. The groups would disperse in order to bypass the enemy’s strengths (his manoeuvre units). Reconnaissance would be conducted, usually in conjunction with locally raised forces, to precisely locate the target. The force would then concentrate to attack the enemy’s weaknesses, his lines of communication, command and control centres and supply bases. If these small groups met larger enemy formations they would disperse again rather than attempt to fight. The small groups would then withdraw into complex jungle terrain to avoid discovery and to reconstitute. Most importantly the dispersed groups would be supplied by air, therefore removing their vulnerable ground LOCs and allowing them to move independently of the road network.<sup>20</sup> It is interesting that this theoretical approach to conventional

---

<sup>18</sup> John Bierman and Smith, C. *Fire in the Night – Wingate of Burma, Ethiopia, and Zion* (New York: Random House, 1999), 248.

<sup>19</sup> Fergusson was then a major in the Black Watch (a Highland infantry regiment) and a veteran of the Western Desert. He was another officer who knew Wingate from Palestine and he met him again during the disastrous early phase of the Burma campaign.

<sup>20</sup> Bernard Fergusson. *Beyond the Chindwin: Being an Account of the Adventures of Number Five Column of the Wingate Expedition into Burma, 1943* (London: Collins, 1962), 146.

nonlinear operations was “rediscovered” in 1991, although not as a result of studying operations in Burma. During the development of the doctrinal concept of *AirLand Battle Future*, US Army Training and Doctrine Command (TRADOC) conducted a wargaming process that produced a “Battlefield Cycle” of 5 stages: Disperse, Mass, Fight, Re-disperse, Reconstitute.<sup>21</sup> This cycle is almost identical to the Chindit approach to operations.

Ideally, the operations of the L RPGs should be coordinated with a “main force”. Mike Calvert, one of Wingate’s column commanders in the first expedition, provides a vivid “bicycle wheel” analogy of the L RPG’s operational concept:

We were a well-balanced fighting force...going to the hub of the situation in order that we might cut some of the spokes. Then with pressure on the rim, the whole structure might break down. Thus [the L RPG] in itself was only part of the grander design.<sup>22</sup>

Wingate had already begun writing about his ideas on the theory of long-range penetration and submitted two papers to GHQ India in 1942. Ultimately Wingate was able to persuade the C-in-C India (General Wavell) to provide him with resources for this type of operation.<sup>23</sup> This first expedition, consisting of 3000 British, Gurkha and Burmese troops, and 1000 animals, penetrated Burma on foot in February 1943. The operation, codenamed LONGCLOTH, was broken down into separate company and battalion-sized “columns” that manoeuvred independently of one another. Wingate established the Joint nature of the operation from the outset. Air support was vital and was to be provided by the Royal Air Force (RAF). To provide the essential link with the Air HQ in India for resupply and close air support, Wingate had insisted on taking RAF officers and signallers who had knowledge of such missions and of

---

<sup>21</sup> General John Foss, “Advent of the Nonlinear Battlefield, *AirLand Battle Future*,” *Military Review* (January 1991): 23.

<sup>22</sup> Brigadier Michael Calvert. *Prisoners of Hope* (London: Leo Cooper, 1996), 14.

<sup>23</sup> Julian Thompson. *The Imperial War Museum Book of War Behind Enemy Lines* (London: Sidgwick and Jackson, 1998), 134.

ground-to-air communications. He wanted the RAF air-ground liaison teams to be seconded to him early so that they could be incorporated in the training programme<sup>24</sup>.

The force withdrew after four months, again on foot, for the loss of approximately one third of its strength. “Withdrew” is perhaps a little generous; the columns were actually ordered to disperse by Wingate, under pressure from the enemy, and made their own way back to India. The material effects of the operation appeared to be limited; a few bridges destroyed, railway lines damaged and a number of Japanese killed. Many of the survivors were physically and mentally exhausted from operating for such a long period geographically separated from the main body of the Army. Many had contracted infections from which they would take months to recover. Wingate, however, made a favourable report on the expedition, concluding that a new force should be raised<sup>25</sup>. The new C-in-C India who received Wingate’s report was General Auchinlek<sup>26</sup>. The report that he submitted was also reasonably favourable, but it was written after Wingate’s report had been distributed.<sup>27</sup> Auchinlek warned that the LRPs should only be used to support the main effort, and that the commander of the force should be working towards achieving the strategic aim of the entire force. He did suggest, however, that the effect on the morale of the rest of the force in Burma and India was extremely positive. Most importantly, as far as the “theory” was concerned, it had effectively been proven that ground forces could operate independently within the enemy’s rear areas, using radio to communicate with the rear HQ and between the columns and supplied

---

<sup>24</sup> An RAF wireless operator, Arthur Willshaw, described the communications set-up for the brigade. “I found myself allocated to the headquarters column...Our main job was to coordinate the requirements of all the columns, the RAF element of each [column] being an RAF officer and two NCOs. These teams would reconce [conduct reconnaissance] for a suitable area for a supply drop, coordinate the requirements of all columns and pass the information to the brigade HQ column via the RAF wireless set. They would then go out, light flair paths in line with the dropping zone and supervise the drop from the ground. My job on HQ column was to keep wireless contact with all the columns and with RAF HQ New Delhi who planned and put into execution the requirement for the air supply drops.” Philip Chinnery. *March or Die* (Shrewsbury: Air Life Publishing, 1997), 29.

<sup>25</sup> “Take at once measures to raise not less than 6 long-range penetration groups out of the proper materials. (The strength of each Group should be in the neighbourhood of 3,000 all ranks).” Julian Thompson. *The Imperial War Museum Book of War Behind Enemy Lines* London: Sidgwick and Jackson, 1998), 171.

<sup>26</sup> Auchinlek replaced Wavell after the defeat of British forces in Burma and their retreat to India.

<sup>27</sup> Julian Thompson. *The Imperial War Museum Book of War Behind Enemy Lines* London: Sidgwick and Jackson, 1998), 168.

and supported by airpower. It had been vitally important to receive support early from the RAF, both in the form of the air-ground liaison teams and the aircraft necessary to conduct the training<sup>28</sup>.

Winston Churchill also saw Wingate's report and its impact on him was profound. Churchill understood that he finally had a British success story in the Far East to show off to the Americans. It went some way to prove that the British were taking serious offensive action in that theatre in an effort to reopen the Burma Road and take the pressure off the Americans in the Pacific. After reading Wingate's recommendations, he planned to take him along to the next inter-Allied conference<sup>29</sup>, in a bid to gain American assistance for mounting the next expedition.

The Americans offered whole-hearted moral and generous physical support to Wingate's enterprise. It was clear to the Americans that the first Chindit expedition had lacked substantial air support. General Henry 'Hap' Arnold ordered that an "Air Commando" was to be formed specifically to support Wingate's "Special Force". It would contain transport aircraft for the necessary lift of men and supplies; it would also have bombers and fighters to provide offensive support and light aircraft for use in liaison, reconnaissance and the evacuation of casualties<sup>30</sup>. This blatantly went against the US Air Force's principle of Centralised Control. Patrick O'Brien, an Australian RAF officer attached to Special Force, described this dedicated air support as "unprecedented". Not even American units received such support. In addition to this dedicated American support, the force could also "occasionally" count on, "All the resources of the US and British Air Forces in India. To supply whole armies in this munificent scale

---

<sup>28</sup> To be fair to Wingate, it had initially been the intention of the previous C-in-C India to commit the Chindits simultaneously with an offensive by the main force, but the British and Indian forces were not thought to be ready to conduct an offensive at that stage. Auchinleck also warned that too much effort spent on raising formations for specialised tasks would be a drain on the Commonwealth forces as a whole; the tendency would be to "cream off" the best soldiers to serve with these units.

<sup>29</sup> The Quadrant Conference, held in Quebec in 1943. At the same conference, Churchill was also planning to introduce the Americans to his choice for Supreme Allied Commander, South East Asia, Vice-Admiral Lord Louis Mountbatten. Mountbatten was then serving as the Chief of Combined Operations in Britain (The term "Combined" was used by British forces in World War Two to describe "Joint" operations).

<sup>30</sup> "100 L1 and L5 Light aircraft, 35 Dakotas, 50 Mustang fighters, 30 Mitchell bombers, 10 Helicopters (Sikorskis)." Terence O'Brien, *Out of the Blue – A Pilot with the Chindits* (London: Collins, 1984), 49.

would have taxed even the immense resources of the United States.’<sup>31</sup> In the following year, Allied forces *would* successfully supply entire armies as they advanced further into Burma.

The Air Commando did not fit easily into the Allied Joint command structure. Both General Arnold and General Marshall (US Army Chief of Staff) had written to Mountbatten insisting that the Air Commando should report directly to General Arnold and not through the Theatre chain of command.<sup>32</sup> The Air Commando was not to come under the command of Special Force, but was dedicated to it. There were two plausible reasons for this unorthodox command situation; the first was so that the Air Commando could be protected as a single entity and not broken up and reallocated for other tasks. It should be remembered that there were fewer air assets in Burma than were available to commanders in other theatres. Secondly, this command structure would ensure that Special Force received support where and whenever it was needed. The command structure was made to work, partly because of the personalities of the commanders of the Air Commando and Special Force (Colonel Cochrane and Major General Wingate respectively). Fortunately for Special Force, the Air Commando came under the protection of, but did not receive interference from, General Arnold.

Ironically, it was while travelling on one of the American aircraft, that Wingate met his death. Wingate had been conducting liaison visits to his brigades some six weeks into Operation THURSDAY. The B-25 on which he was travelling was caught in one of the violent and unpredictable storms that occur over the jungles of Burma. The pilot lost control of the aircraft and it crashed into a jungle hillside. Brigadier Lentaigne, one of the subordinate Brigade commanders, was appointed by Slim to take over command of Special Force.

It is not clear if there was a “Joint doctrine” for the employment of the Air Commando alongside Special Force. Wingate certainly wished this to be the case, and had stated as much in his report after the

---

<sup>31</sup> Ibid, 49.

<sup>32</sup> Herbert A Mason et al. *Operation Thursday – Birth of the Air Commandos* (Montgomery, Alabama: Air Force History and Museums Project, 1994), 20.

first Chindit expedition<sup>33</sup>. The command structure was also made to work because of the close ties, understanding and high degree of trust that developed between the airmen and soldiers of the two organisations. This trust was developed because the British soldiers and American aircrew trained together. In the types of operations that are envisaged in the immediate future, where rapid deployments by Interim Brigade Combat Teams are deemed necessary within 96 hours, there may not be time to develop such a degree of trust unless units have already conducted Joint training. Doctrine, training and command relationships, if not coordinated in advance, will potentially lead to problems of poor integration at the tactical and operational levels. If the ground forces are to rely on the air forces for their tactical and operational lift and for subsequent logistic and close air support, there must be continuous joint training and integration.

In his memoirs, Brigadier Mike Calvert reiterated the importance of airpower to the ground troops. Calvert stated that, “above all we placed our reliance on air.”<sup>34</sup> Airpower was not only important for supply, casualty evacuation (which will be examined below) and manoeuvre but also for offensive air support to the troops on the ground. Close Air Support (CAS) was practised extensively during the Joint training of the Chindits and Air Commandos. The pilots flying CAS sorties could drop HE within 100 to 300 yards of friendly troops<sup>35</sup>. It is not surprising that Calvert is so “air-minded” in his approach to operations<sup>36</sup>. His own brigade was inserted by air into Burma and so avoided the long, debilitating march-in that the first Chindit expedition had to endure. Air supremacy was therefore vital to theLRPG’s

---

<sup>33</sup> “Set up at once a command and staff to control Long Range Penetration *in all its phases* [emphasis added]. This must be the centre for doctrine, training, planning and later, control in the field.” Brigadier Michael Calvert. *Prisoners of Hope* (London: Leo Cooper, 1996. First published London: Jonathan Cape, 1952), 36.

<sup>34</sup> Ibid, 38.

<sup>35</sup> “Close air support was practised in training so that with the help of RAF officers with columns on the ground, a column, battalion, or brigade commander could call up support at very short notice and deliver a very great weight of explosives at ranges from 100 yards to 300 yards of our own troops. Without this essential arm the troops on the ground could never have succeeded”. Ibid, 39.

<sup>36</sup> Before meeting Wingate, he had written a paper on the potential for the use of aerial resupply for small forces operating in the enemy’s rear. Rossetto, Luigi. *Major General Orde Wingate and the Development of Long Range Penetration* (Manhattan, Kansas: MA/AH Publishing, 1982), 31.

operations. The Japanese in Burma from 1943 onwards had vastly inferior air forces when compared to the Allies, both in terms of quantity and quality of aircraft. They also lacked anti-aircraft assets and those they did hold were not employed efficiently. The remote positioning of the Chindits' defensive bases, known as "Strongholds", made it difficult if not impossible to bring anti-aircraft weapons to bear on the air LOCs. Any modern enemy, however, might be able to procure hand-held surface-to-air missiles (SAMS). Weapons, such as the Stinger SAM are ideal for use in complex terrain because of their relatively low weight and small size. They are also highly suitable for an enemy who has had limited training. What is surprising is that FM 3-0 does not fully examine the requirement for air support when it discusses noncontiguous and nonlinear operations. Admittedly air supremacy is not an overwhelming requirement if the enemy does not have an anti-air capability, but agility and tempo will be difficult to achieve, especially in complex terrain, without some form of air support. As was recently discovered in Afghanistan, a ground force that does not have its own integral fire support assets has to rely heavily on close air support. The "precision fires" (1944-style) provided by Cochrane's Air Commando were superb. The pilots were very experienced and had the benefit of equally experienced RAF pilots operating on the ground to "talk" them onto the targets. There were limitations, however, in the employment of air power as the sole provider of fire support. Air-delivered ordnance could not (and still cannot) be "adjusted" onto the target, no matter how experienced the pilot or the observer on the ground. The advent of Laser Guided Bombs (LGBs) and other Precision Guided Munitions (PGMs) using Global Positioning System (GPS) guidance has undoubtedly improved the accuracy of close air support strikes. The problem still remains of providing sustained, correctible, accurate fire. Cost-effectiveness might also become an issue; artillery shells are a fraction of the cost of Joint Direct Attack Munitions (JDAMs). Artillery can be employed in this manner but on the nonlinear battlefield the artillery must be able to maintain the same tempo as the other manoeuvre forces. The great weight of artillery ammunition required may have the effect of reducing tempo. Establishing the balance between close air and artillery support is therefore difficult.

The L RPGs operated entirely by Mission Command or “mission-type” orders. The Germans term for this practice is *Aufstragtaktik* or Directive Control, “in which the commander gives general instructions as to his “intent” and what he wants done, but leaves it to his subordinates to implement his wishes.”<sup>37</sup> The Chindit commanders gave their subordinates the tasks they wished them to undertake but did not prescribe the method of execution. The columns and brigades had all trained extensively together in the months leading up to the advance into Burma and so there was a broad understanding of the general intent of the mission. Wingate had produced a number of papers and directives that had been circulated to the brigades in the months leading up to the beginning of the operation. This was the closest to written “doctrine” within Special Force. He had also spoken to the brigades directly on a number of occasions in an effort to get his general intent across to the column leaders and indeed many of the soldiers. The operation orders that he issued to the individual brigades were therefore very short. Brigadier Calvert, in command of 77 Brigade, received only a two-page document, which provided him with his objectives and Wingate’s intent. Subsequently Fragmentary Orders (FragOs) were issued either by radio or in person when Wingate made frequent visits to his brigade commanders. When Wingate was killed, Lentaigne continued this practice. In *The Chindit War*, Shelford Bidwell explained the orders process:

Lentaigne issued no long, detailed formal orders. His instructions were expressed in a pithy signal, expressing his intentions and telling his brigades where they were to go. This was the practice in the Force. The local commanders were left free to use their initiative and if their operations required coordination to arrange it between themselves.<sup>38</sup>

At brigade level, Calvert wrote short “intention” paragraph to his battalions after he received the OpO from Wingate. Obviously the format does not conform completely with modern US or British doctrine, but he wrote only four sentences, the last of which gave the unifying purpose to the three tasks assigned to 77 Brigade<sup>39</sup>. Once on the ground, there were a number of difficulties in terms of command

---

<sup>37</sup> Richard Holmes (Editor). *The Oxford Companion to Military History* (Oxford: Oxford University Press, 1999), 261.

<sup>38</sup> Shelford Bidwell. *The Chindit War – Stillwell, Wingate, and the Campaign in Burma: 1944* (New York: Macmillan, 1979), 207.

<sup>39</sup> “My intention is, after the introduction of 77 Brigade into the Kaukkwe valley:

(i) To form a stronghold with an airstrip at the south landing ground which will be held until the Japs have been driven from northern Burma.



and control that faced the commanders of the L RPGs. Because of the nature of noncontiguous operations in complex, especially mountainous terrain, radio communications could not always be relied upon. The message may have to be relayed through the rear HQ in India. Therefore, when orders were to be passed over the radio, it had to be achieved quickly and efficiently. There was no room for lengthy transmissions. Mission command was therefore essential to these noncontiguous, nonlinear operations, not simply because the performance of the radio equipment was erratic (although this can still be a problem today), but because of the need for flexibility in command at the tactical and operational levels.

At the tactical level, mobility was enhanced because the columns did not carry many heavy weapons or supplies. In order to receive additional resources, the brigade secured a “base” within striking distance of the objective and then called for the assets that it required to be delivered by glider or parachute. All of these other requirements were requested using the “Joint” radio link provided by the RAF liaison teams. A further means of reducing the logistic burden on the columns, and increasing the number of combat troops, was to include very few logistic troops within the columns. Obviously it was not possible to completely do away with the logisticians; they had to operate somewhere. The majority were located back in India, either working within the brigade and Special Force rear headquarters, or packing the parachutes and the supplies that were to be dropped. The detractors of Wingate’s Special Force, and there were many, saw only the relatively large logistic staffs in India,<sup>40</sup> not the freedom of manoeuvre that was conferred upon the Chindit columns.

- 
- (ii) To establish and maintain a block on the road and railway between Mawlu and Hopin.
  - (iii) To deny the Japs the use of the Irrawaddy and road Bhamo-Myitkyina as an L. of C. to the north.
  - (iv) By the cutting of his L. of C. and by inflicting as much damage as possible on his men and material, to gain such moral and material ascendancy over the Japanese in this area that he will be forced to withdraw his remnants south of parallel 24° in defeat and rout.” Brigadier Michael Calvert. *Prisoners of Hope* (London: Leo Cooper, 1996), 26-27.

<sup>40</sup> “Observers in India criticised the large staffs visible there, but if one took away the distributing staffs of any normal brigade or division the size of staff left behind would be even greater. For instance, all our mule-drivers were also trained infantry soldiers and were interchangeable with the men in the companies, and were thus interchanged. Having such a short tail the power of manoeuvre was wonderfully enhanced.” *Ibid* 39.

The L RPGs' logistic "tail" was also light because casualties were flown out by light aircraft after limited treatment had been administered. During the first Chindit expedition there were no light aircraft to evacuate casualties. If they could not walk on and keep pace with the columns, then the wounded had to be left to the mercies of the locals or the Japanese. In some cases the medical officers administered a lethal injection to the very badly wounded. Before the operation began, the troops had all been briefed about their prospects for survival if they were left behind. They were as mentally prepared for that eventuality as they could be. The columns carried silver Rupees with which to bribe the local people to care for the wounded but this was not a satisfactory solution for the morale of the force over the long-term. "Hap" Arnold provided 100 light aircraft for casualty evacuation during Operation THURSDAY. The improvement to morale was significant. It should be noted that this support was not always available because of the usual fog and friction of war. Finding a landing site for the aircraft was sometimes difficult and the weather often prevented them from flying. In some cases, therefore, the wounded had to be marched out or carried on mules and litters. What is certain is that this innovation allowed the columns to be less encumbered by casualties and large medical resources. This helped to reduce the logistic footprint of the force and improved mobility.

Maintenance of morale is vitally important on the noncontiguous, nonlinear battlefield, not simply because of the issue of casualty evacuation. Morale is of particular concern when the intention of these operations is to frequently place soldiers in a geographically isolated position; the troops are without the comforting presence of friendly forces on their flanks and rear. Even if the soldiers are not literally "surrounded by the enemy" they may have this conception. O'Brien provides several examples of "outbreaks of fear" that spread throughout his column when the enemy was not even close<sup>41</sup>. It appears that a soldier may be extremely tense when first deployed into "enemy territory". He will become accustomed to the isolation as the operation goes on but there is a limit to his mental endurance. Wingate

---

<sup>41</sup> Twice during the operation, the column broke and scattered. The reconnaissance platoon also had to be disbanded after it spent too long detached from the main body of O'Brien's column. O'Brien, Terence. *Out of the Blue – A Pilot with the Chindits* (London: Collins, 1984), 94.

had suggested that the columns be withdrawn after 3 months to ensure that they did not become physically and mentally exhausted. An operational pause would be avoided by replacing the original three brigades with a second group of three. The original three brigades would rest and prepare to relieve the second group. Unfortunately Wingate died before the end of the first three-month period. Two of the additional brigades were also used as reinforcements for the Imphal battle that was conducted simultaneously with Operation THURSDAY. When the Chindits were chopped to Stillwell's command he was keen to get the maximum benefit from this additional asset. He insisted that they remain in the field longer. Physical and mental deterioration increased more rapidly as the force continued to operate in an isolated manner. Because Wingate's advice was never heeded it is difficult to discern if his scheme of manoeuvre would have had a more beneficial impact on the campaign as a whole. It certainly would have improved the effectiveness of the Chindits and enabled them to maintain equal pressure on the Japanese LOCs.

In addition to maintaining the morale of the troops, maintaining the loyalty and safety of the local population is also difficult in the noncontiguous, nonlinear battlespace. The loyalty of the locals in Burma could never be guaranteed. Those elements of the population who were not pro-British would either kill or hand-over allied casualties to the Japanese once the LRPC columns had moved on. Loyal populations risked a great deal if they were found by the Japanese to be harbouring an injured allied soldier. It would likely cost them their lives. Once a column had moved through an area, it was virtually impossible for the allies to provide protection to the loyal population of that area. O'Brien records an incident where approximately 150 villagers were executed by the Japanese for allowing his Chindit column to stay in their village.<sup>42</sup> Wingate intended to raise local troops to assist in reconnaissance and screening missions, but only if the home villages of these men could be protected by the Chindits<sup>43</sup>. On the modern noncontiguous battlefield where mobile, nonlinear operations may have to be sustained over

---

<sup>42</sup> Ibid, 123.

<sup>43</sup> Brigadier Michael Calvert. *Prisoners of Hope* (London: Leo Cooper, 1996), 25-26.

extended periods, the same problems may have to be faced. If allied nations have not mobilised for war, they will be fighting with their armies at peacetime strength and therefore have few reserves to act as garrison troops. Commanders may be forced to move on and leave the local population to the mercies of the enemy, be they conventional forces, hostile militia or an ill-disposed neighbouring tribe or clan.

The provision of protection for loyal local populations is an important consideration. Ensuring that the flanks and rear of the force are adequately protected is also vital on the dispersed, nonlinear battlefield. The Chindits' solution to the problem was two-fold. Wingate had arranged for increases in the formation and unit establishments. Each brigade had four battalions, each company four platoons, rather than the three-battalion and three-platoon organisation used in the rest of the British Army. Each brigade would also include regular and locally raised Burmese troops, all lead by British officers. Calvert described how each element was to be employed:

*In such warfare as we were to fight there are no safe flanks[emphasis mine]...The danger always is an attack by the enemy in the flank as a counter measure. The only protection against this is by information[sic]. Around the flank and to the rear is spread what Wellington called 'a cloud of skirmishers' whose duty is to give information of any flanking movement and then cause the maximum delay to this movement until such time as the Brigade can deploy to face the threat. In our case the 'cloud of skirmishers' would be the Burma Rifles thickened up with Kachin levies raised on the spot.<sup>44</sup>*

On the modern battlefield, the commander might be able to call on additional assets to supplement these arrangements. Satellite imagery, UAVs and JSTARs might assist in providing early warning of an enemy's approach. But all these assets would have had difficulty penetrating the jungles in Burma and locating an enemy that moved on foot (and often at night). Dr Stephen Biddle raises many of these issues in a recent article concerning the problems faced by Coalition forces in Afghanistan. He points out that foliage and "urban clutter" degrades sensors and makes it difficult to distinguish between military forces and innocent civilians.<sup>45</sup> Biddle mentions two theatres in which the US is currently operating, the Philippines and Columbia, where the terrain is similar to that encountered in Burma. 46%

---

<sup>44</sup> Ibid, 44.

<sup>45</sup> Stephen Biddle, "Afghanistan and the Future of Warfare," *Foreign Affairs* volume 82, 2 (March/April 2003): 38.

of the land area of the Philippines is covered in wooded or urban areas. In Columbia this proportion is much higher. Under these conditions, there is still no effective replacement for a soldier conducting ground-level reconnaissance. In the complex noncontiguous, nonlinear battlespace, the enemy has many more options for concealment and has the freedom to approach from virtually any direction. Ground surveillance and flank protection are critical and are both improved dramatically when the soldier on the ground is a local man who understands the terrain.

As discussed before, the material benefits of the two Chindit operations were not great, but their influence, and the influence of the Air Commando's operations, on the rest of the force was profound. Some participants in the campaign, and some historians, have downplayed their contribution, pointing out that the greatest victory against the Japanese was won at Imphal and Kohima. This is undoubtedly true. At Imphal conventional soldiers, who had not been given additional training, fought a Japanese Corps to a standstill and then pursued them back across western Burma. The Japanese suffered in excess of 50,000 casualties, most of them killed in action or due to exhaustion and disease. This operation will be examined in the third chapter. But the Chindits demonstrated that mobile, noncontiguous, nonlinear operations could succeed when supported by airpower. When the decision was made to disband the Chindits in early 1945, Mountbatten sent notes to Derek Tulloch, the Special Force Chief of Staff, and to Brigadier Mike Calvert. He explained to Tulloch that his own view of the conduct of operations had been shaped by Wingate's ideas and the exploits of the Chindits:

Instead of gradually increasing the number of LRP brigades, what we are really doing is turning the whole of the Army onto an LRP basis, with the LRP brigades acting as specialists. Wingate's influence will live on in this theatre not only with the men he trained and led, but in my own outlook on the campaign in future.<sup>46</sup>

---

<sup>46</sup> Prithvi Nath. *Wingate – His Relevance to Contemporary Warfare* (New Delhi: Sterling Publishers Private Limited, 1990), 69.

In his letter to Calvert he stated that the entire 14<sup>th</sup> Army had become “Chindit-minded”<sup>47</sup>. According to Mountbatten, therefore, the mind of the operational commander had been shaped by the LRPG operations and this attitude had pervaded the entire Joint force in Burma. The Chindits were also “air-minded” in that they utilised airpower for an element of fire support and to transport their indirect fire assets into the AO when required. The employment of airpower allowed the Chindits to increase their mobility and tempo of manoeuvre. This “model” of employment contained other new elements that were essential for successful operations to be conducted in the nonlinear, noncontiguous battlespace. Wingate understood that “Joint” training was required from the outset; the Air Force provided liaison elements down to battalion level to make the organisation function effectively. The force was allocated additional assets to improve its flank protection, which could never be guaranteed in the dispersed battlespace. In addition, the Chindits brought local troops with them to screen their flanks. They also employed locals from the areas in which they operated in order to improve their situational understanding; they were mindful, however, of the dangers that the population might face from the enemy when friendly forces moved on to the next objective. To be “Chindit-minded”, therefore, meant to think of the AO in nonlinear, noncontiguous terms and to move through or over any type of terrain. It meant being prepared to reduce the “logistic footprint” by relying on airpower. And it meant allowing junior commanders to exercise their own initiative, guided by their commander’s intent.

---

<sup>47</sup> “ It was the most distasteful job in my career to agree to your disbandment, but I only agreed because by that time the whole Army was Chindit-minded and therefore there was no need for a special force as such.” Brigadier Michael Calvert. *Prisoners of Hope* (London: Leo Cooper, 1996), 140.

## CHAPTER TWO

### OPERATIONS BY CONVENTIONAL FORMATIONS IN A NONLINEAR, NONCONTIGUOUS AREA OF OPERATIONS

The Long Range Penetration operations of 1943 and 1944 demonstrated that troops could operate for extended periods on a dispersed, nonlinear battlefield while being supported almost entirely by airpower. A much more difficult task now faced the joint planning staffs as they prepared to provide the same level of support to entire allied corps and armies. Although the initial attempt to return to the offensive in Burma (the First Arakan Campaign) was a failure, Slim and his staff learnt a number of lessons that would prepare them for fighting on a noncontiguous, nonlinear battlefield.

The difficulties of dealing with the terrain and the enemy in Burma, and the possible means of overcoming them, were partially understood by one of the British commanders, Lieutenant General NMS Irwin. In November 1942 he wrote to General Wavell (Commander in Chief, India) on the need for air transport assets for the campaign:

If I can jump the gap between the Chindwin [River] and, say, the Shwebo [River] in one hop, if I can get troops into an area of relatively good communications and there we could fight on, monsoon or no monsoon, until we have driven an M.T. [motor transport] road through.<sup>48</sup>

Wavell agreed with this view, but pointed out that the aircraft were simply not available. Production of transport aircraft, in both Britain and the United States, had not yet been expanded to meet the needs of all the theatres of operation. The Burma theatre was a very low priority for both powers.

The First Arakan campaign of 1943 was a failure. Part of the reason for this failure was the method of command and control used by Irwin. It was certainly not “Mission Command” in action. Irwin appears to have been a practitioner of *Befehlstaktik*, or “order command”<sup>49</sup>. Irwin either attempted to control the offensive from his Headquarters back in India or came forward and gave instructions

---

<sup>48</sup> Louis Allen. *Burma: The Longest War. 1941 – '45* (New York: St Martin's Press, 1984), 95.

<sup>49</sup> Richard Holmes (Editor). *The Oxford Companion to Military History* (Oxford: Oxford University Press, 1999), 261.

directly to brigades and battalions, regularly overriding the orders of the Divisional Commander<sup>50</sup> and bypassing him and his Corps Commander, General Slim. Actual execution of the operation had been given to Headquarters 14<sup>th</sup> Division. Irwin, however, had insisted that the British and Indian brigades be fed into the fight one by one. He believed in overwhelming strength being applied over a narrow frontage<sup>51</sup>. The Japanese defeated them sequentially. The Japanese had conducted “short-range” penetrations by marching through terrain that the local British commanders had deemed impassable. When the British were on the offensive, the brigade commanders tended to conduct frontal attacks because they believed their superior numbers and firepower would achieve success and because they did not believe that they could work onto a flank through such difficult terrain. Their thinking was essentially linear and they attempted to maintain contiguous AOs between the brigades.

To further aggravate the command and control situation, the Divisional Headquarters that was attempting to direct the offensive was eventually controlling 9 brigades. Slim was sent by Irwin to observe operations and he concluded, before he arrived in the AO, that this arrangement was simply not working. There was too much for the Division headquarters to control without augmentation or support from a higher HQ. As the situation continued to deteriorate, Irwin eventually placed Slim’s XV Corps Headquarters in operational control of the offensive but did not allow it to have control over 14<sup>th</sup> Division’s logistics. The Army Headquarters retained responsibility for the Division’s logistic support, an unbelievably complicated arrangement<sup>52</sup>. The inadequate supply system was a major contributory factor, not just because of the system of control, but also because of the difficulties of the terrain and the lack of logistic infrastructure. Ineffective training, poor health and low morale of the British and Indian forces involved contributed to the failure of the offensive. It was recognised that the command and control arrangements that had been in place in the First Arakan campaign had not allowed initiative to be exercised by subordinate commanders and consequently an immense overhaul was planned of C<sup>2</sup> in the

---

<sup>50</sup> Louis Allen. *Burma: The Longest War. 1941 – '45* (New York: St Martin’s Press, 1984), 96.

<sup>51</sup> *Ibid*, 120.

<sup>52</sup> *Ibid*, 107.



Theatre. Mission command can only be effective where the senior commanders allow it and where the forces are organised to be responsive to it, with the correct levels of command and responsibility in place.

The operational command structure was changed in August of 1943. These major changes would allow for the type of campaign that General Irwin had envisaged in 1942. Irwin himself, the chief obstacle to mission command, was removed as commander Eastern Army and replaced by General George Giffard<sup>53</sup>. The next wave of changes was initiated at the strategic level at the same Quadrant conference in which Wingate had participated. The first was the creation of a truly combined and joint headquarters. The Supreme Headquarters South East Asia Command (SEAC) was to be established by November 1943. As well as being both combined and joint it had three subordinate component headquarters beneath it. Giffard was elevated to command the Land component, 11<sup>th</sup> Army Group. Slim was given command of Eastern Army, later renamed 14<sup>th</sup> Army. The Supreme Allied Commander was to be Admiral Lord Louis Mountbatten, the former Chief of Britain's Combined Operations ("Combined Operations" was the British wartime term for what are now called "Joint Operations"). Although he had been associated with the failure of the Dieppe Raid of 1942, he had unparalleled experience of Joint operations and had made a large contribution to the initial planning for Operation OVERLORD. This experience, and this level of combined, joint command, was vital in ensuring that noncontiguous, nonlinear operations could be coordinated across the entire theatre at the operational level and below.

Coordination at the operational level between the allied nations was vital. One of the major problems associated with combined operations, particularly in noncontiguous, nonlinear theatres, is ensuring that there is a degree of agreement and cooperation. Unfortunately, all three allied powers, Nationalist China, Britain and the United States, had totally divergent national interests. Certainly they all wished to see the Japanese defeated, but they each had a different conception of the purpose and endstate of the campaign. For the Americans the campaign in the Pacific was the Eastern strategic Main Effort. Churchill agreed with this view; Britain in 1943 did not have the resources to pursue a vigorous

---

<sup>53</sup> Giffard and Slim immediately began planning another offensive in the Arakan with the whole of XV Corps.

campaign anywhere in the Far East. The supporting strategic effort in the Eastern Theatre, again for the Americans, was to pursue their China Policy<sup>54</sup>. The Americans considered it vital to support the Chinese and keep them in the war against Japan. A Chinese Army might tie down large numbers of Japanese soldiers and prevent them from reinforcing the Pacific. China was also available as a platform for launching air attacks on Japan<sup>55</sup>. The ultimate intent was to use long-range bombers to attack targets on the Japanese home islands. Burma was therefore essential to the “China Policy”, because it provided the only viable route to provide supplies for the Chinese along the “Burma Road”<sup>56</sup>. The Japanese invasion of Burma in 1942 effectively closed that supply route. The “lifeline” to China was maintained by flying supplies over the Himalayas from India, a huge undertaking that required hundreds of aircraft. The largest aircraft used on the China route had a payload of only 4.5 metric tonnes<sup>57</sup>. The US therefore had to commit huge resources to this supply mission. The British argued that these resources could have been more effectively used in bypassing Burma and striking at Malaya or Sumatra where Japan was drawing raw materials for her war effort. But Britain did not own these resources and did not have sufficient resources of her own to accomplish the task. Churchill did not believe that the Chinese would expend much energy in fixing more Japanese forces. He believed that the Nationalists were simply using US supplies to prepare themselves for the coming civil war against the Communists. In retrospect, Churchill’s views were probably correct. The American operational plan was to conduct an offensive, in northern Burma only, to reopen the Burma Road and then to defend the road against Japanese interdiction efforts. For the US, operations in Burma were a supporting effort to a supporting effort. For Britain, Burma was the main effort in the East. The purpose of the British operational plan in Burma, when compared to that of the Americans, was significantly different. The British thought it far better to clear the whole of Burma and reopen the port of Rangoon, the original entry port for the Burma Road. With

---

<sup>54</sup> Callahan, Raymond. *Burma 1942-1945* (Newark: University of Delaware Press, 1979), 54.

<sup>55</sup> Ibid, 28. As early as the spring of 1941 American pilots of the “American Volunteer Group” (AVG, later immortalised as “The Flying Tigers”) began to operate their P-40 “Tomahawk” aircraft from Chinese bases.

<sup>56</sup> These supplies were landed at the Burmese port of Rangoon and transported north on the railway, cross-loaded onto trucks and taken into China along the “Burma Road”.

these various differences it was essential for the allies to closely coordinate their operations. An enemy on the nonlinear, noncontiguous battlefield will find it relatively easy to defeat his opponents sequentially if their efforts are uncoordinated.

The campaign at the operational level was fought over a noncontiguous, dispersed battlefield. From the border with China in the north, the “front” extended for 700 miles due south to the coast at Mogaung, in the Arakan. Between these two areas, however, there was no continuous “front-line”, or Forward Line of own Troops (FLOT). In the autumn of 1943 there were a number of geographically isolated troop concentrations. The most northerly allied position, Fort Hertz, was located very close to the Chinese border and garrisoned by locally raised, British-led levies. Stilwell’s American-led Chinese forces were concentrated around Ledo in the north of Burma. 200 miles to the south of Stilwell, IV Indian Corps was located in and around Imphal in Assam, India. A further 250 miles then separated IV Corps from XV Indian Corps in the Arakan coastal region. There were no permanent positions or garrisons located between these areas. Aerial reconnaissance was conducted over the territory between the major troop concentrations, but this method was inherently unreliable when attempting to locate bodies of enemy soldiers moving through the dense jungle and mountainous areas. Instead the Allies relied on locally raised forces that, according to Major General Evans (who commanded a Division in the theatre), “operated as an intelligence screen rather than as combat units”<sup>58</sup>. Raising these forces was often difficult because of the divided loyalties and varying political intentions of the Burmese people. As a colonised people, some Burmese were pro-British, some were indifferent and simply unhelpful to the Allied cause, but many were vehemently opposed to British colonial rule and were actively seeking to prevent its return. Despite these drawbacks, some groups, such as the Naga and Karen peoples, were persuaded to support the Allied cause. In fact there was still sufficient loyal support to provide an effective flow of information on the exposed flanks of the formations. As was mentioned in the previous chapter, modern technology is now available to assist the commander, but it will not be capable of filling

---

<sup>57</sup> The Curtiss C-46 Commando could carry 4,535 kg, or 10,000 lb.

all the gaps between noncontiguous AOs, nor will it always work effectively because of poor weather, complex terrain and the fog and friction of war. There must be a man on the ground who can maintain observation over these gaps or “dead spaces”. It is more effective if that man is a local who understands the terrain in which he is operating.

Mountbatten, the new Supreme Allied Commander, arrived in theatre in late October 1943. At a gathering of the senior staff of Eastern Army and HQ RAF in Delhi, he presented his vision of the forthcoming campaign. Hitherto, the major Japanese offensive technique had been to conduct a surprise penetration, followed by encirclement and isolation of the allied force. This technique was successful because it severed the LOCs and usually forced the allied force to withdraw. To overcome this Japanese approach, Mountbatten stated that he would arrange to provide supplies by air and that this would allow allied forces to fight on while isolated.<sup>59</sup> Continuous operational pressure would also be maintained by ground and air forces, forcing the Japanese to fight on through the monsoon. It was Mountbatten’s intention to capitalise on the Allied advantage in medical resources and expertise, and to force the Japanese to operate in unhealthy areas. This type of operational pressure during the monsoon made life exceptionally difficult for the Japanese; they would be forced to fight and because of their poor logistic support and their tortuous 5,000-mile lines of communication, they would suffer even more casualties. This approach would accelerate their operational culmination but would only be possible through improved cooperation between the individual components.

In comparison to General Irwin’s Orders Command approach in the First Arakan campaign, Mountbatten operated a more open form of command, giving a broad intent, explaining what he wanted done, not the method of achieving it. Slim also provided a simple intent statement to his subordinates. At one point in the preparation for the Irrawaddy River crossing, Giffard directed Slim to use an airborne assault to capture the base areas in Meiktila<sup>60</sup>. Ultimately Slim did not use the prescribed method of his

---

<sup>58</sup> Evans, Geoffrey. *Slim* (London: Batsford, 1969), 107.

<sup>59</sup> *Ibid*, 105.

<sup>60</sup> Slim, Field Marshall William. *Defeat into Victory* (London: Pan Books, 1999), 376.

superior commander; he achieved the purpose of cutting the enemy's LOCs and turning him out of his defensive positions in the north around Mandalay by an overland rather than airborne attack on the town. A command climate was achieved that allowed subordinates to modify and improvise the execution of the plan provided that the purpose was achieved.

The theory that aerial resupply could be employed on a large scale to prevent culmination had already been proved by the Long Range Penetration operations. Giffard and Slim initially planned to use aerial resupply at formation level in late 1944. XV Corps, in the so-called Second Arakan Campaign, would undertake the first operational test of this approach<sup>61</sup>. In order to protect its own northern flank, XV Corps would not be relying on the terrain, but would place one of its divisions, the 81<sup>st</sup> (West African), in an adjacent valley some thirty miles north of the nearest friendly formation. The 81<sup>st</sup> would be the first allied formation to receive all its logistic support from the air. Plans had already been put in place by Slim and the XV Corps commander for the resupply of other formations should they be encircled<sup>62</sup>. Such situations were to occur frequently throughout the remainder of the campaign. Eventually a significant number of allied Divisions were to be supplied totally or partially by air.

In terms of logistics, FM 3-0 suggests two methods of sustaining a nonlinear, noncontiguous operation: "...sustaining operations may depend on CSS moving with maneuver units or delivered by air."<sup>63</sup> In practice manoeuvre units will probably rely on both techniques to varying degrees. To reduce the logistic burden of the conventional forces, the scale of effort was to be vastly increased when compared to the Chindit operations. During the second Arakan campaign of early 1944, the Joint rear ground element of the air transport system was increased in size. Additional ground transport and

---

<sup>61</sup> The objective of the initial operation was simply to seize a coastal port by an overland approach, and then the road that ran north from the port over the nearby mountain range. The mountains divided the Arakan region, forming a spine down the centre of the peninsula. The Japanese had fortified the area where the road crossed the mountain ridgeline. XV Corps was tasked to clear this area.

<sup>62</sup> "Christison and I agreed that if any XV Corps troops were cut off they would stand fast. I promised that, when necessary, they would be supplied by air and they would be relieved by our counter-attacking forces, with whom they were to cooperate by taking the offensive themselves at the first opportunity." Slim, Field Marshall William. *Defeat into Victory* (London: Pan Books, 1999), 233.

<sup>63</sup> United States Army. *FM 3-0: Operations* (Washington DC: Headquarters, Department of the Army, 2001), 5-49.

unskilled labour assets were provided at the airfields to meet increased demand. The “packers” were warned to expect 24-hour operations. The operation that this organisation was preparing to support was predominantly static. In future, the operations would be mobile, involve considerably more soldiers dispersed over a much wider area and include armoured formations. In Burma, it was no small task to support the allied soldier on the noncontiguous, nonlinear battlefield. On the modern battlefield equally, there are no easy solutions to reducing the logistic footprint of the manoeuvre elements. This level of support will require the long term provision of dedicated air transport assets from the US Air Force.

To ensure maximum coordination and cooperation between allies and service components, further reorganisation took place to establish Combined and Joint HQs at progressively lower levels of command. This was necessary if the lower-level formations, especially the Divisions, were to operate effectively in a noncontiguous manner. Mountbatten drafted an order for the integration of all British and American air forces within the theatre on 11<sup>th</sup> December 1943. Although Stillwell “objected very strongly” (Mountbatten, 26), the measure was implemented with the agreement of Generals Marshall and Arnold, and Air Marshal Portal of the RAF. In preparation for the offensives of 1945, further reorganisation took place. In October 1944, Headquarters 14<sup>th</sup> Army formed a Joint Headquarters with 221 Group RAF at Imphal. Other reorganisations and decentralisation had already taken place at Theatre level. Both XV Corps (operating in the Arakan coastal region of Burma) and the Line of Communication Command had been removed from 14<sup>th</sup> Army and placed under command of 11<sup>th</sup> Army Group, now renamed Allied Land Forces South East Asia (A.L.F.S.E.A.). The separation of XV Corps from 14<sup>th</sup> Army allowed Slim to concentrate on the direction of just two Corps in the campaign in central Burma. The transfer of the Line of Communication Command to higher authority was more significant in that 14<sup>th</sup> Army would no longer have direct control of the air transport assets that were vital to the planning and execution of the logistic elements of the forthcoming campaign. The advantage at the Theatre level was that it allowed centralised control of these assets<sup>64</sup>. Despite the fact that more air transport assets had been provided for

---

<sup>64</sup> Ibid, 373 – 388.

the Theatre, they were still not at the levels seen elsewhere in the Pacific and Europe. The new organisation was both Joint and Combined; there was joint representation, especially air, down to brigade level and sometimes below.

Joint headquarters had also been set up to allow better integration of noncontiguous, nonlinear operations at the tactical level. HQ XV Corps joined with HQ 224 Group RAF, and HQ Force 64 of the East Indies Fleet (Royal Navy). When the Royal Navy appointed a Flag Officer to command the Naval element operating on the Arakan coast, Force 64 established its headquarters alongside 26 Indian Division, “where there was also RAF representation.”<sup>65</sup> These formations were to operate along the coast in support of one another. Because of the poor state of the roads in that region of the Arakan, the brigades operating along the coast were supplied totally by landing craft, which were also able to penetrate inland along the many rivers of the coastal region. Once again, it was the establishment of total maritime and air supremacy, attained by the naval and air forces that allowed operations to be supported in this manner. In the last week of January 1945, Christison was commanding a truly nonlinear, noncontiguous series of three near simultaneous tactical engagements from HMS *Phoebe*. All three operations were directed against separate decisive points. None of the manoeuvre forces allocated to the capture of these objectives had, to quote from the FM 3-0 description of nonlinear operations, “geographic reference to adjacent forces.”<sup>66</sup> All noncontiguous, nonlinear tactical operations, down to the Divisional level in at least one case, were commanded by “Joint” headquarters.

The introduction of a new operational or tactical concept demands a different attitude of mind. The psychology of the force needs to be changed. The British commanders who lead the first Arakan campaign were “linear-minded”. They saw the advantages of mass, in terms of fires and men, over a narrow frontage, which normally meant a frontal attack. They considered theirs and the enemy’s flanks to be protected by supposedly impenetrable terrain. They could not believe that an enemy, inferior in terms

---

<sup>65</sup> Louis Mountbatten. *Report to the Combined Chiefs of Staff by the Supreme Allied Commander South East Asia, 1943-1945* (London: His Majesty’s Stationary Office, 1951), 109.

of numbers, logistics and technology, would use the terrain to his advantage. In order to break this mould and employ nonlinear, noncontiguous operations, a new command philosophy was required. Mountbatten and Slim both employed “Mission Command” and allowed their subordinates the freedom to use their own initiative. They also radically altered the organisation of the entire force, creating Combined and Joint headquarters at a number of levels and conducting joint training down to the lowest tactical levels. Their introduction of large-scale aerial resupply operations and reorganisation of formation tables of organisation allowed formations to reduce their logistic footprint, minimise logistic drag and increase tempo. They also required significant support in the form of American-built and crewed aircraft, and total air superiority, to make these operations work. The employment of large numbers of local troops improved the flow of information and created a screen to provide early warning of attack from the flank or rear. In short, they created the conditions for successful nonlinear, noncontiguous operations.

---

<sup>66</sup> United States Army. *FM 3-0: Operations* (Washington DC: Headquarters, Department of the Army, 2001), 5-11.



## **CHAPTER THREE**

### **A BETTER MODEL? THE BURMA CAMPAIGN COMPARED TO OPERATIONS JUST CAUSE AND DESERT STORM.**

As discussed in the introduction to this paper, FM 3-0 provides two examples of nonlinear, noncontiguous warfighting operations; the Persian Gulf War of 1991 and the US intervention in Panama in 1989. The writers of FM 3-0 intended to provide modern examples about which young officers would have some basic knowledge. Certainly both of these campaigns contain examples of noncontiguous and nonlinear warfighting operations and both are currently well known. Both, however, have weaknesses that reduce their relevance as examples to any officer and, more importantly, to joint planners. By studying the Burma campaign, the modern military professional will develop a clearer understanding of the inherent difficulties of Joint nonlinear, noncontiguous operations. They will also be able to examine concepts that provide possible solutions to the problems of fighting in dispersed AOs. Admittedly there are limitations with the study of any campaign, and Burma is no exception, particularly because of the differences in technology between the 1940's and the present. Despite these differences the Burma campaign offers a more relevant model for nonlinear, noncontiguous operations. In addition, the description of modern nonlinear, noncontiguous operations that is provided in FM 3-0 is much closer to the Burma model than Operations DESERT STORM and JUST CAUSE.

In *Defeat into Victory*, Slim suggests that conventional formations operating on the dispersed battlefield of the future should be equipped and conceptually prepared for movement and sustainment by air. In these terms, the description provided in FM 3-0 of nonlinear, noncontiguous operations could be more closely applied to Slim's commentary, and the Burma campaign as a whole, than to Operations Desert Shield and Just Cause. FM 3-0 states that sustaining operations, "may depend on CSS moving with manoeuvre units or delivered by air."<sup>67</sup> According to Colonel Christopher Papparone, a US Army logistician who served in the Gulf and in Panama, the ground forces in Operation Just Cause did not

---

<sup>67</sup> United States Army. *FM 3-0: Operations* (Washington DC: Headquarters, Department of the Army, 2001), 5-11.

depend entirely on air LOCs. He states that ground LOCs, “ were opened within hours of initial combat.”<sup>68</sup> All required stocks had been in-loaded to theatre prior to the beginning of the operation. Most of the fuel was moved by road to the helicopter refuelling points. During the Gulf War no aerial resupply took place. Some units of the XVIII Airborne Corps were prepared for resupply by helicopter but none of the mechanised units were predisposed to sustainment by air. These heavy formations were restricted by the limitations of their heavy, ground-based logistic system. In Burma, both the 14<sup>th</sup> Army and Chinese/American forces employed tanks and mechanised formations whenever possible, even in jungle and mountainous terrain. Combined arms Tank Brigades (equipped with M3 and M4 tanks, mechanised infantry and self propelled gun batteries) were attached to each Corps and resupplied by air in the same manner as the light infantry formations. Fuel, spare parts and tank ammunition were parachuted or air landed to these brigades. The scale of effort required to simultaneously support a number of modern mechanised brigades in a dispersed battlespace, however, would be immense. The ridiculously high fuel consumption rates of the M1 tank would be prohibitive unless they were used in limited numbers. If the Objective Force’s Future Combat System is to be fully supported from the air, then economical fuel consumption is an essential design requirement. The US Air Force has not been slow in recognising the logistic needs of the Objective Force. In a recent article in *Military Review*, two USAF officers from Air Mobility Command (AMC) provided their view of the nonlinear battlespace of the future, one that is remarkably similar to that of Slim and Wingate, and reminiscent of the conditions that were faced in Burma. They discuss the need for air support for intra-theatre movement and for the provision of logistic support (often into “austere aerial ports of debarkation”) as ground forces, “maneuver and fight on dispersed, nonlinear battlefields.”<sup>69</sup> They also discuss the need for units to, “shed most of the organic supply and support that traditional mechanised units lug around the battlefield. To risk reducing their supply trains, maneuvering units must be confident that the air-mobility system will

---

<sup>68</sup> Papparone, LTC Christopher R. “Multilinear Warfare,” *Army Logistician*, (November- December 1996), 22.

<sup>69</sup> Colonel Robert Owen and Captain Todd Fogle: “Air Mobility Command and the Objective Force: A Case for Cooperative Revolution,” *Military Review* (January-February 2001), 12-13.

support them continually under any circumstances.” Slim also spoke about the need for “reduced scales of transport and equipment” on the dispersed battlefield.<sup>70</sup> The scale of air support that is required to relieve a force of logistic drag is significantly larger than the airlift required for “emergency resupply”. As was pointed out in Chapter One, the 20,000-strong “Chindit” Special Force relied on 13 Dakotas and 12 medium transport aircraft, along with 100 light aeroplanes, which were all dedicated to resupply sorties and casualty evacuation. During periods of peak demand, these aircraft were insufficient to provide all their needs and other aircraft had to be loaned to Special Force from theatre assets. The Chindits did not require any fuel, which made resupply much more simple. The demand for airframes increases again when the force is being transported into theatre or to another AO (Intra-theatre) by air. In an effort to meet the extraordinary demand for lift assets in Burma, Mountbatten pushed for the increase in flying hours per aircraft. It was eventually increased from 100 hours per aircraft to 240 hours.<sup>71</sup> Owen and Fogle express the vital point; the US Air Force and US Army must be working together very closely to ensure that AMC has the assets required to move and sustain the Objective Force on the nonlinear, noncontiguous battlefield<sup>72</sup>.

This view is supported by a more recent RAND study of the deployment requirements of the Interim Force’s Stryker Brigades. The study concludes that to move a complete Stryker Brigade by air would take 60 C17-equivalent aircraft sorties. This would include 3 days worth of essential supplies, including food, water and ammunition. The study considered that fuel would be available from host nation resources and so this requirement was not calculated as part of the lift. The authors did recognise the fact that this might not always be possible. Fuel is certainly one of the most difficult commodities to transport by air. Despite this, the 60 C17-equivalent loads would absorb 25% of the total AMC airlift capacity for the movement of one

---

<sup>70</sup> Field Marshall William Slim. *Defeat into Victory* (London: Pan Books, 1999), 549.

<sup>71</sup> Louis Mountbatten. *Report to the Combined Chiefs of Staff by the Supreme Allied Commander South East Asia, 1943-1945* (London: His Majesty’s Stationary Office, 1951), 245.

brigade.<sup>73</sup> The authors admit that this is probably a generous assumption; in the 1991 Persian Gulf War only 40% of the AMC's total lift was allocated for the movement of two Army Corps. Depending on the distance from the Continental US to the AO, sealift assets would be unlikely to arrive for several days after the deployment of the Stryker Brigade. For the Brigade to be involved in offensive noncontiguous operations immediately on arrival, a large number of those aircraft would therefore be required for the resupply of the Brigade by air. Helicopters might be used immediately but only if they have "self-deployed" to theatre. As the build-up in theatre continued, there would be a number of conflicting priorities. The USAF would require a large proportion of the lift available to bring in its own assets. Simultaneous operations in other theatres would place additional demands on air transport resources. Examination of the Burma campaign readily demonstrates the scale of effort required for transporting and sustaining an army using air assets. But the scale of effort allows forces to significantly increase their own tempo of operations relative to the enemy's.

Part of the reason for the length of the campaign in Burma and its nonlinear, noncontiguous nature, was that the Theatre Commander had to compete for resources (in both personnel and equipment) with other theatres, especially airlift assets. The US military is also now involved in a global war. Admittedly the current war is not yet being conducted at the level of intensity of the Second World War, but so far the US Armed Forces have not been enlarged to meet the increased operational tempo and demand for forces. Certainly, very few additional Theatre or strategic lift assets have been purchased. At the time of writing, however, US forces are conducting a war against Saddam Hussein's regime in Iraq while simultaneously fighting guerrillas in the Philippines, supporting a counter narcotics war in Columbia, concluding warfighting operations in Afghanistan, reinforcing the Korean Peninsula,

---

<sup>72</sup> Colonel Robert Owen and Captain Todd Fogle "Air Mobility Command and the Objective Force: A Case for Cooperative Revolution," *Military Review* (January-February 2001), 18.

conducting Stability and Support operations in the Balkans and increasing the security of the homeland. During the intervention in Panama in December 1989, the Cold War had just ended (the Berlin Wall had been opened on 9 November 1989) and there were no other discernible threats that might require large-scale commitment of forces to other theatres. With only limited resources available, the duration of a campaign will tend to increase because mass cannot be applied against an enemy. As Slim pointed out, limited resources will also force the adoption of dispersed (nonlinear, noncontiguous) operations. The G4 staffs in the Gulf and Operation Just Cause did not have to wrestle with the problems that were continually faced by the Allied planning staffs in Burma over weeks, months and even years of nonlinear, noncontiguous campaigning. Lieutenant General William Pagonis, who commanded the US 22<sup>d</sup> Support Command in the Gulf War, stated that the short duration of the ground campaign never seriously tested the logistic system. So much ammunition and fuel had been brought forward before the start of the offensive that no restrictions had to be placed on the use of any commodity. Had the campaign been prolonged, Pagonis suggests, manoeuvre units would not have received all the stocks they demanded. A cut of 50% may have been necessary as the ground LOCs were extended further.<sup>74</sup> In a prolonged operation shortages may well develop because of extended LOCs, guerrilla attacks, bad weather or a limit of transport assets. As the 14<sup>th</sup> Army advanced on Rangoon, ration scales were cut in half to allow for an increase in the delivery of ammunition and fuel stocks. Conflicting priorities might also have an effect on sustainment in a global war. Pagonis and his staff did not have to worry about a sudden change in priority because of an increasing threat in another theatre. By contrast, on 10<sup>th</sup> December 1944, 14<sup>th</sup> Army lost a huge proportion of its lift assets because of successful Japanese operations in the Chinese AO. 75 aircraft were withdrawn literally overnight. The first hint that Slim and his staff had of this change in priority was the noise created by the departure of these precious airframes.<sup>75</sup> Therefore in the current strategic

---

<sup>73</sup> Vick, Alan et al. *The Stryker Brigade Combat Team – Rethinking Strategic Responsiveness and Assessing Deployment Options*. (Santa Monica, California: RAND, 2002), 19.

<sup>74</sup> Pagonis, Lt Gen William. *Moving Mountains: Lessons in Leadership and Logistics from the Gulf War* (Cambridge, Massachusetts: Harvard Business School Press, 1992), 149.

<sup>75</sup> Field Marshall William Slim. *Defeat into Victory* (London: Cassell, 1956), 396.

climate, the Burma model is more relevant to the modern planner than the Gulf or Panama. In Burma, a multitude of shifting priorities were inflicted on the operational, Army and Corps-level planners, and leaders at all levels of command.

The Burma campaign also offers numerous examples of defensive battle in a nonlinear, noncontiguous context. By contrast, the Gulf War and the intervention in Panama do not provide any *major* examples of active defensive operations in a dispersed AO<sup>76</sup>. Throughout these short campaigns, Coalition and SOUTHCOM forces were predominantly on the offensive. Commanders and planners may wish to hold on to the initiative by remaining on the offensive but this is not always a realistic option. Friendly forces will eventually have to take up defensive positions for various reasons. The defensive allows forces to, “defeat an enemy attack, buy time, economise forces or develop conditions favourable for offensive operations.”<sup>77</sup> A planned operational pause might also be necessary because of the need to move logistic stocks forward. Under these circumstances the force would then transition to the defensive. In the Burma campaign there were two main reasons for conducting defensive operations. The primary reason was to create favourable conditions for an offensive. These defensive operations were tied into the overall operational plan. They were conducted simultaneously with offensive operations in other noncontiguous AOs within the Theatre. The most famous example was the defence of the Imphal/Kohima area by IV Corps. Slim had hoped that the Japanese would go onto the offensive in order that he could force them to culminate before mounting his own attack towards Mandalay. Imphal and Kohima were both logistic bases that would be used to launch 14<sup>th</sup> Army’s offensive. The Japanese were operating on extended LOCs and without a significant aerial resupply capability. It was therefore vital for them to capture the logistic stocks in Imphal and Kohima to sustain their forces for their offensive into India. As the Japanese were preparing to launch their offensive, the second Chindit expedition, Operation

---

<sup>76</sup> Individual formations from VII Corps were rested during the first two nights of the ground offensive and took up defensive postures. None of these formations was attacked.

<sup>77</sup> United States Army. *FM 3-0: Operations* (Washington DC: Headquarters, Department of the Army, 2001), 8-1.

THURSDAY, was deployed deep into the enemy's rear. Once the Japanese offensive began, IV Corps units withdrew to a number of noncontiguous defensive perimeters around Imphal and Kohima and the Japanese cut the allied ground LOCs. Allied resupply continued by air and at this stage in the War the Japanese had fighter aircraft that could be massed against the allied air LOCs. The enemy aircraft were operating at extended range, however, and could not stem the flow of supply aircraft into the defensive "boxes". The Japanese fighters usually came off worst against the British Spitfires. On the ground the battle was a mix of mobile and area defensive operations. Two of Wingate's LRP brigades were used outside the defensive areas in short-range operations to interdict the enemy's ground LOCs. The Japanese attacked the defensive areas for several weeks with their usual fanatical offensive spirit and faced equally tough resistance from the British and Indian troops within the perimeters. But because of their failure to capture any significant quantities of supplies, and the disruption at several points of their ground LOCs, the Japanese soldiers were nearing culmination. Food and ammunition were in desperately short supply. The Japanese Army commander eventually ordered the withdrawal of his force, leaving behind 55,000 dead. The Allies required little fuel for a static defence, but the quantity of ammunition that was flown or dropped in was immense. The Allies also took the precaution of removing any personnel and civilians who would not be able to contribute to the battle; these individuals were flown out along with administrative troops and the sick and wounded. The Imphal/Kohima battles provide an excellent example of defensive operations on the nonlinear, noncontiguous battlefield. The main point is that air supremacy is vital to maintain the air LOCs into the isolated defensive "boxes". In addition, the number of airframes required to supply the "boxes" was not insignificant. Intimate cooperation is required between ground and air forces to ensure success. Slim also makes the point that the troops should be forced to fight in isolation for too long. He suggests that they must be relieved as quickly as possible or else they will lose heart<sup>78</sup>.

---

<sup>78</sup> Field Marshall William Slim. *Defeat into Victory* (London: Pan Books, 1999), 546.

Defensive plans were also established to protect key rear areas during offensive operations; on the dispersed nonlinear battlefield in Burma, rear areas were extremely vulnerable, especially when large numbers of combat troops were required to prosecute an offensive. There were few available for rear area security. Enemy forces could infiltrate rear areas and attack LOCs much more readily when there was no linear FLOT or “frontline”. In fact the main purpose of the Allied LRP brigades had been to attack the enemy’s LOCs and his base areas. During the Allied Second Arakan Campaign, the Japanese deliberately targeted rear areas, to sustain themselves and to force the Allied offensive to culminate. The Arakan became the “test case” for the conduct of dispersed defensive operations. The “Admin Box Fight”<sup>79</sup> during Second Arakan demonstrated that Allied forces could be sustained from the air in a defensive battle, provided that air supremacy could be achieved and maintained. Rather than fly out the logistic troops, they were retained and used to assist in the defence of the perimeter. Cooks, drivers and storemen also conducted patrols against the Japanese. The Chindit method was to establish defensive bases, termed “Strongholds”, into which they could withdraw and from where they could be resupplied. It is strange that the Japanese failed to provide sufficient protection to their own rear areas during the campaign of 1945, especially as they had frequently operated against Allied LOCs during their offensives from 1942 to 1944. The Meiktila area in particular was vital as a supply base, rail and road hub and airhead. It was vital ground for the Japanese and had to be held if the defence of Mandalay in the north was to be effective. Despite the knowledge that the Allies had already conducted an air-landing envelopment during Operation THURSDAY, the Meiktila region was left with little protection.<sup>80</sup> An obvious but vital lesson to be grasped from the Japanese experience at Meiktila is that an enemy is just as likely to target LOCs and supply bases. Because of the need to use scarce combat troops (infantry, SOF and armour) in offensive operations, it will be vital to provide adequate training and suitable weapon systems to logistic units in order that they are better able to defend themselves. It is alarming that current US Joint doctrine does not attribute too much importance to the protection of rear areas and LOCs.

---

<sup>79</sup> Ibid, 240.



In the land context, nonlinear operations tend to be conducted from selected bases of operations (ashore or afloat), but without clearly defined lines of operations. Because rear areas are not clearly defined, *their security as well as that of LOCs are not priority concerns*.<sup>81</sup> (emphasis mine)

If the US Armed Forces are not to make the same mistake as the Japanese at Meiktila, this conception must be radically revised.

Both the 1991 Gulf War and the intervention in Panama were concluded very quickly once ground troops were committed to joint operations. These campaigns were kept mercifully short for a number of reasons: The enemy in both cases was generally of poor quality in terms of training, morale and equipment; The enemies' command and control systems were easily disrupted and they were unable to synchronise the operations of their forces. Thomas Donnelly et al suggest that the general quality of the Panamanian forces was so poor that it would have taken "monumental tactical incompetence" on the part of American forces to prevent the operation from being successful.<sup>82</sup> In Panama the majority of warfighting operations were concluded in 5 days. In the case of the Gulf War the ground phase only lasted 100 hours. Quite obviously, every Commander and planner should endeavour to find means of concluding operations quickly. A lengthy operation is usually costly in terms of lives and national wealth. There are several good reasons, however, for studying a noncontiguous, nonlinear campaign such as Burma that lasted 2 years. One reason for this type of study is that, despite the desire to conclude wars quickly, there have been numerous examples of prolonged conflicts since 1939. The United States has been involved in three, major prolonged "hot" wars within this period: The Second World War, Korea and Vietnam. Other powers have also taken part in long, costly warfighting operations; the French in Algeria and Indo-China, the British in Kenya, Malaya and Northern Ireland (among others), the South

---

<sup>80</sup> Louis Allen. *Burma: The Longest War. 1941 – '45* (New York: St Martin's Press, 1984), 430-431.

<sup>81</sup> Joint Doctrine Encyclopedia, 462.

<sup>82</sup> Thomas Donnelly, et al. *Operation Just Cause – The Storming of Panama*. (New York: Lexington Books, 1991), 401.

Africans in Angola and the Soviet Union in Afghanistan<sup>83</sup>. Clausewitz explained that despite the rational desire to keep wars short, they have a tendency to escalate and generate their own momentum, despite the intentions of the combatants. The complex nature of the terrain in Burma also assisted the Japanese in their efforts to defend it and so prolong the struggle. Although the Allies had air superiority by late 1944 and could bring a large weight of fire to bear against most positions that the Japanese chose to defend, they could still not bring the campaign to a satisfactory conclusion until August 1945. The Japanese had been soundly beaten and suffered huge numbers of casualties in two decisive battles; Imphal/Kohima in March 1944 and Mandalay/Meiktila in 1945. But they continued to fight and successfully hold ground because of their sound training, strong unit cohesion, fanatical courage and their ability to survive with far fewer resources than the allied soldiers. The allies have recently faced a similarly determined foe in Afghanistan. The enemy had been “beaten” in the early phases of the war in Afghanistan but the men who fought against Task Force Mountain in Operation ANACONDA proved far more resilient. In the monograph *Afghanistan and the Future of Warfare*, Dr Steven Biddle explains that the Taliban and Al Qaeda in 2002 fought a conventional war using complex terrain (including urban areas) to minimise the US superiority in precision fires. Dr Biddle describes it as, “the traditional response of armies to high-power opposition.”<sup>84</sup> Biddle suggests that in future the US will find itself fighting against dispersed and dismounted opposition that uses cover and concealment to great effect. The fact that US commanders were surprised by this discovery is perhaps an indication that they had not paid sufficient attention to sound historical examples of noncontiguous, nonlinear warfare. Such examples as Panama and the Gulf are slightly misleading because they paint a picture of rapid, decisive operations that are not always possible against a determined, intelligent enemy, even one who lacks airpower, armour and a robust logistic system. The legacy of the Gulf War has been projected into FM 3-0. The manual is still predominantly focused on the use of armoured forces. Most of the initial wargames that were used to

---

<sup>83</sup> Dr Karl Magyar and Dr Constantine Danopoulos (Editors). *Prolonged Wars – A Post Nuclear Challenge* (Montgomery, Alabama: Air Force University Press, 1994), 10.

<sup>84</sup> Stephen Biddle. “Afghanistan and the Future of Warfare,” *Foreign Affairs* volume 82, 2 (March/April 2003): 38.

develop the nonlinear, noncontiguous concept of AirLand Battle Future, used heavy (armoured and mechanised) formations against similarly equipped enemy forces<sup>85</sup>. By contrast, the Burma campaign provides an outstanding example of a joint force successfully coping with a nonlinear, noncontiguous battlespace and using a full range of integrated military capabilities, including mechanised, air-portable, motorised and light infantry, armoured forces and airpower, to deal with a lightly equipped, thinking enemy.

The flexibility of the infantry on the noncontiguous, nonlinear battlespace of Burma was of vital importance to the conduct of the campaign. It allowed commanders to use infantrymen alternately in mechanised, motorised, air-portable, amphibious, and conventional light roles. Some additional training was required to “convert” the infantrymen to their new role. Fortunately the operational level commanders, including Mountbatten and Slim, had recognised the need for such organisational flexibility long before the start of the 1945 offensive. Slim ordered that two of his divisions be radically transformed in terms of equipment and organisation, in order to deal with the different terrain conditions to the east of the Irrawaddy River. Two brigades of the 5<sup>th</sup> and 17<sup>th</sup> Indian Infantry Divisions were converted from light infantry brigades into mechanised brigades. The third brigade was re-roled as a light “air-portable” brigade. The latter could be used either to move ahead of the mechanised brigades to capture airfields or to reinforce the rest of the division once the mechanised elements had captured a suitable landing zone. Both the mechanised and the air-portable brigades were stripped of much of their ground-based logistic assets; they were to use a minimum of road transport and rely almost completely on aerial resupply. In preparation for the move across the Irrawaddy, any unit that was not in contact was withdrawn to conduct training. These changes were not ad hoc, but planned and executed in advance. All of these units were then able to move relatively easily between mountainous jungle, open terrain and urban operations. The organisational flexibility of the formations in Burma allowed them to shift between roles and cope more easily with different terrain conditions and the changing operational situation.

---

<sup>85</sup> In an article for *Army Magazine* in February 1991, the Commander of TRADOC only provided suggestions for

In the advance on Rangoon, the lead division, with its mix of armoured, mechanised, motorised and air-portable troops, took great bounds along a narrow axis. This combination of forces was necessary to allow for rapid movement. The armour was used to break through light resistance. More heavily fortified areas were bypassed by the armour and reduced if necessary by dismounted motorised troops; in some cases the engineers bulldozed new roads around defended areas and the enemy defenders were isolated and left to wither on the vine. The mechanised and armoured forces would then capture an airfield or a suitable landing zone for the fly-in of fuel and ammunition. Troops would also be flown in to hold the airfields and the armoured columns would move on immediately, being supplied from that airfield until they were able to capture another airfield or landing zone within 50 miles. The reduction of the Division's logistic footprint allowed for increased tempo. The fact that all the units involved were from the same formation also simplified command and control measures. The advance was therefore rapid, very manoeuvrist in concept, but absolutely dependent on maintaining a small logistic footprint by aerial resupply.

According to George MacDonald Fraser, a veteran of the campaign in Burma, the true exponents of light, mobile, operations were the "conventional" soldiers of the main body of the 14<sup>th</sup> Army. Fraser explains:

[The soldier in Burma was] one of the most lightly armed and least encumbered foot soldiers since the introduction of firearms in war. It was gear designed for fast, easy movement by the lightest of light infantry – and I wonder why it has gone out of fashion.<sup>86</sup>

There are obviously a few items of modern equipment that have served to increase the load of the soldier, including night vision devices, body armour, personal radios and Nuclear, Biological and Chemical (NBC) equipment. But in Afghanistan, US infantry were weighed down by loads of 60-80 lbs,

---

changes to organisation in heavy divisions and brigades.

<sup>86</sup> Fraser, George MacDonald. *Quartermaster General: A Recollection of the War in Burma*. (New York: The Akadine Press, 2001), 23. "Burma was a barebones war; ...it was so because it was a close-contact, hand to hand war in which, while tanks and aircraft and artillery played an important part, it was first and foremost an infantryman's business, and actions tended to be on a small scale compared with the battles in Europe. By today's standards we were sparsely equipped. Thank God." Ibid, 19.

and in some cases they carried up to 110 lbs. Obviously there is some risk in minimising the load of the soldier. If a force does not receive its scheduled supply of combat essentials, there is risk that it will culminate. Over insurance against this possibility, however, will increase logistic drag and reduce tempo at the tactical and operational levels.

An additional logistic burden in extended campaigns, which is often not considered in short-term operations, is the increased wastage due to disease. The sick have to be evacuated alongside soldiers who are wounded in action. The worst monthly casualty rate recorded by Commonwealth forces in Burma was nearly 70,000 in June 1944. Only 3,000 casualties were due to military action. Approximately 36,000 casualties were due to malaria alone.<sup>87</sup> Modern medicine (and future medical developments) will undoubtedly reduce this burden, however, it must still be considered in this context. An equally high casualty or sickness rate might be incurred in the future, particularly if chemical or biological weapons are used against US and allied forces. In Iraq, there is a clear threat from non-nuclear WMD and possibly an emerging nuclear capability. Biological and chemical weapons are increasingly easy to manufacture, even by small enemy groups. Dispersion is therefore essential to reduce the effectiveness of a WMD attack. The force will be most vulnerable if it has to mass immediately prior to an attack.

Joint Operations were common to the war in Burma, the Persian Gulf War and the intervention in Panama: Combined operations were also a feature of Burma and the Gulf War. There were, however, significant differences in the level of joint and combined integration. That is not to suggest that the Combined and Joint command structure in Burma was perfect. Stillwell's insistence that he would not allow NCAC to serve directly under the Combined/Joint Force Land Component Commander (CJFLCC - General Giffard of 11<sup>th</sup> Army Group) was problematic (at least until Stillwell was relieved of command). Chinese unwillingness to coordinate their efforts with the remainder of the Allied force often meant that

---

<sup>87</sup> Louis Mountbatten. *Report to the Combined Chiefs of Staff by the Supreme Allied Commander South East Asia, 1943-1945* (London: His Majesty's Stationary Office, 1951), 249.

simultaneity was lacking. It was far easier for the Japanese to conduct an economy of force operation in the Chinese AO while reinforcing other AOs where they faced a greater threat. And while there were Joint headquarters established in the British AOs down to divisional level in some cases, there was not always unity of command: "Command by Committee" between the single service commanders was the usual approach. The practice of establishing joint headquarters down to these levels, however, meant that greater understanding developed between the service commanders and staffs. These headquarters lived, worked and trained together closely, and were therefore better able to execute noncontiguous, nonlinear operations because they had a clearer understanding of each other's needs and capabilities. There was also a Combined Joint Force Commander (Supreme Commander, South East Asia Command) and three separate and distinct single service component commanders with their own staffs. In the Gulf War, US Army General Schwarzkopf was "dual-hatted" as Joint Force Commander (JFC) and Joint Force Land Component Commander (JFLCC). There were a number of problems that emerged from this arrangement, mainly concerning the ability of Schwarzkopf and his staff to cope with and focus properly on both areas of responsibility. In addition, there was a problem of coordination between the various services. Gordon and Trainor argue in *The Generals' War* that, "...in Schwarzkopf's command, the plan was joint more in name than in fact. Each service was allowed to attack the way it preferred, with little thought about how an attack in one area would affect the fighting in another."<sup>88</sup> This approach is potentially disastrous in nonlinear, noncontiguous operations. Slim stated that although formations would often be acting in noncontiguous AOs on the dispersed battlefield, their efforts must all be applied to achieving the strategic and operational objectives. The primary strategic objective of liberating Kuwait was achieved. The operational objective of destroying the Republican Guard was not, partly because of this lack of coordination between the separate, unsynchronised ground elements working in their noncontiguous AOs. The introduction of FM 100-5 in 1982 enabled officers to talk the language of synchronisation,

---

<sup>88</sup> Michael R. Gordon and Bernard E. Trainor. *The Generals' War. The Inside Story of the Conflict in the Gulf* (Boston: Little, Brown and Company, 1995), 432.

“jointness” and operational art but without truly understanding it.<sup>89</sup> Despite the lengthy period of build-up prior to the launching of the air campaign, it appears there was little time taken by ground and air forces in particular to understand one another’s *modus operandi*. Several authors<sup>90</sup> mention the misunderstandings that regularly took place between higher commanders over the issue of “targeting”. Richard Swain claims that there was no, “mutually agreed-upon doctrine for air-ground coordination” (Swain, 185). Swain attributes this lack of understanding to the predominantly tactical background of most US Army officers. This is probably true, and often unavoidable, but Joint training at the tactical level would have helped to reduce much of this inter-service friction. By contrast, in Burma the ground and air forces appear to have taken every opportunity to conduct joint training and build up a level of trust. In the L RPGs, RAF officers and men served at battalion level to ensure that separate columns received the level of air support that was required. This practice was expanded upon by 14<sup>th</sup> Army. A high degree of mutual understanding is essential on the nonlinear battlefield, particularly where the ground forces are so dependent on the air forces for movement, logistics and fires. Joint training must be a regular event for units and formations, particularly between ground and air forces. For this conceptual leap to be made, officers in the US Army must receive more joint intellectual and staff training alongside their sister service officers at Joint education establishments. The current Staff College system in the United States does not provide a truly Joint education for company and field grade officers. For the US Armed Forces to successfully employ nonlinear, noncontiguous operations in the future, they must conduct joint training and education to be able to fully comprehend each service’s capabilities and requirements.

The current Global War on Terrorism is placing increased demands on US Armed Forces. In this strategic environment, it is possible to conceive of circumstances where all of Slim’s reasons to fight in a

---

<sup>89</sup> Swain, Richard M. “*Lucky War*” – *Third Army in Desert Storm* (Fort Leavenworth: US Army Command and General Staff College Press, 1997), 183.

dispersed manner (“...caused by the terrain, the lack of supplies, or by the weapons of the enemy...”<sup>91</sup>) are still relevant. In terms of the enemy’s weapons, Slim spoke of the nuclear threat that was emerging in the 1950’s. He also discussed the threat from terrorists; Britain was then fighting “Communist Terrorists” in the jungles of Malaya<sup>92</sup>. He postulated that the methods of fighting terrorists would be equally suitable for fighting in an environment where Weapons of Mass Destruction (WMD) might be used.

Unseen, unheard, and unsuspected, [friendly forces] will converge on the enemy and when they do reveal themselves in strength, they will be so close to him that he will be unable to [employ WMD]...without destroying himself. Such land operations, less rigidly controlled and more individualistic than in the past, will not be unlike ours as we approached the Chindwin or the Irrawaddy, and stalking terrorists in a Malayan jungle is today, strange as it may seem, the best training for nuclear warfare.<sup>93</sup>

The threat of WMD will cause forces to manoeuvre over a wide area in smaller groups. A reduced reliance on a heavy, ground-based logistic system will allow these smaller groups to maintain high tempo relative to the enemy. While there may not be shortages of supplies, there will certainly be conflicts over resources between the increasing number of AOs around the world. The US is also currently engaged in fighting terrorists in the Philippines and is likely to face this threat in other areas. In the Philippines, and especially in Columbia, the geographical conditions are very similar to those that were encountered in Burma. The enemy will seek to reduce the effectiveness of advanced US sensors and the lethality of PGMs by entering complex urban, mountainous and jungle terrain. In these types of terrain, ground units will be forced to continue their traditional role of ground reconnaissance and close combat. The scale of effort in any one of the theatres mentioned (including the Philippines and Columbia) could begin to approach the proportions that were witnessed in Burma. The scale of effort, however, is not the most important issue. The main point is ensuring that the conceptual approach to this form of warfare is developed and taught to junior and senior commanders alike. There must also be a truly joint

---

<sup>90</sup> Ibid, 181-183; Scales, Robert H. *Certain Victory: The US Army in the Gulf War* (Fort Leavenworth: US Army Command and General Staff College Press, 1994), 178-180; Rick Atkinson. *Crusade- The Untold Story of the Persian Gulf War* (Boston: Houghton Mifflin Company, 1993), 218-225.

<sup>91</sup> Slim, Field Marshall William. *Defeat into Victory* (London: Pan Books, 1999), 549.

<sup>92</sup> Ironically, these CTs had been trained to fight against the Japanese during the War.



approach to these types of operations that will allow the ground and air forces in particular to compliment one another's capabilities. As was illustrated by the "linear-minded" British commanders of the First Arakan Campaign, a change of mindset is required before noncontiguous, nonlinear methods can be employed successfully in any operational environment against a thinking enemy.

---

<sup>93</sup> Ibid, 550.

## CONCLUSIONS

At the beginning of the War in Burma the Allied field commanders had expected both the enemy and their own forces to behave in certain manner and they were surprised when both forces did not conform to their expectations. Their conception was guided by their own experience of World War 1, the organisation and capabilities of their forces and current doctrine. Furthermore, they had made false assumptions about the supposedly impenetrable terrain and the quality and method of operations of the enemy. These misconceptions were ingrained in their thinking and their approach to warfighting. Study of the military history of the previous 150 years had demonstrated a development towards linear operations. The formative warfighting experiences of many leaders had been gained on the linear battlefield of the Western Front and despite the introduction of the aircraft in combat, their understanding of the battlespace was still essentially two-dimensional. Military training for all ranks was based on many of the lessons of the First World War. The British and Commonwealth units that fought in these early operations were initially organised, trained and equipped for warfare in a European or North African setting. Their soldiers understood that the logistic support on which they relied needed good roads and motor transport. In attack they believed in applying firepower and mass on a narrow front in order to establish a breakthrough. Many British commanders were therefore “linear-minded” at the outset of the campaign, confined by their previous experience, inapplicable doctrine, tactics and organisations. They were also confined by their limited view of what the enemy was capable of accomplishing.

The old linear model could not be adapted to the conditions in the Far East in 1942 and early 1943. Japanese operations did not fit into the conceptual image that was held by allied commanders and soldiers. Rather, the Japanese were allowing a degree of flexibility in their own organisation and method of fighting in order to inflict chaos on the Allies. To improve their own tactical mobility they took the risk of reducing their logistic burden and planned on sustainment using captured allied stocks. The Japanese clearly identified the allies’ vulnerabilities, the lines of communication, and then manoeuvred around allied strengths to attack them.

In order that the allies could cope with the Japanese approach to warfighting, there had to be some fundamental changes in their outlook and organisation for war. In modern slang, the commanders and their troops had to learn to “think outside of the box”. In this case the “box” was a linear, contiguous spatial organisation, supported by heavy ground-based logistics and reliant on a fixed logistic infrastructure. Under Mountbatten and Slim, a new model approach was developed that might now be termed “noncontiguous” and “nonlinear” operations. At the heart of the Burma model are four major elements; joint operations, the use of mission command, the reduction of the “logistic footprint” of the force to increase tempo, and the conduct of operations by dispersed forces which are tactically independent but focused on operational-level objectives. These elements have all been drawn from Slim’s description of the “new kind of warfare” which is expressed in the conclusions to *Defeat into Victory*.

The 1989 Intervention in Panama and the 1991 Persian Gulf War did demonstrate some elements of noncontiguous, nonlinear operations. Unfortunately, commanders and planners alike were still confined by concepts, organisations and logistic support structures that would not allow them to fully exploit the potential of the dispersed battlespace. Although the plan in the mind of the JFC in DESERT STORM was to conduct an envelopment using geographically dispersed forces<sup>94</sup>, the execution was more like a fairly ponderous wheel that ground down any opposition in its path but failed to outmanoeuvre the enemy and trap his centre of gravity. The lack of Joint coordination and the failure of the JFC to synchronise the actions of his dispersed forces compounded the problem. Coordination of airpower with separate Corps and Divisions was vital in Burma to apply pressure on a dispersed enemy simultaneously. Lack of joint and intra-service coordination on the dispersed battlefield of Iraq and Kuwait prevented the Coalition achieving total success. Thankfully, the enemy in the First Gulf War was not very resilient. The intervention in Panama faced an equally weak enemy that collapsed rapidly when confronted by overwhelming force. At no point did the US commanders have to face challenging operational issues

---

<sup>94</sup> H. Norman Schwarzkopf. *It Doesn't Take a Hero* (New York: Bantam Books, 1992) 382-383.

once the operation had got under way. Extensive rehearsals had taken place in the weeks and months prior to the attacks being launched. The logistic support system was not severely tested because all stocks had been in-loaded to theatre prior to D-Day. The lines of communication were also very short and easily protected. The enemy did not produce any serious surprises to test the commanders and staff and there was no need to make major organisational changes during operations. In short, the commanders and planners were not forced to seriously change their conceptual approach to warfighting.

The purpose of this paper has been to recommend a model for modern combined, joint, noncontiguous, nonlinear operations based on the Burma campaign of 1943-'45. The campaign was marked by profound changes in the mindset of air and ground commanders allowing them to successfully conduct dispersed operations. For US Armed Forces to do likewise, it is suggested that certain organisational, conceptual and educational changes are made within the armed forces. One of the main themes of the Burma campaign was the complete integration of land, air and sea forces at all levels of command, in both operations and training. This type of integration must come from the top down and be conceptual as well as physical. The first recommendation would therefore be to set up Joint operational and tactical level education establishments for junior field grade officers. These could be based on the current single service command and staff colleges and the operation level planning schools such as The School of Advanced Military Studies (SAMS). SAMS is mentioned frequently in various works on the Gulf War and Panama. Some authors claim that SAMS graduates made significant contributions to the success of Operations Just Cause and Desert Storm. The course has provided officers with, "a common frame of reference and discourse" (Donnelly, 399) that has inevitably simplified the Army's planning process and helped make Army operations more cohesive. But SAMS does not provide a truly Joint course. Admittedly there is a Joint Operations Course currently being run at the Joint Forces Staff College in Norfolk but this is designed primarily for officers who are due to move into appointments at higher level Joint headquarters. For future nonlinear, noncontiguous operations to be successful, Joint

---

forces at the operational *and* tactical levels must achieve the same level of cohesion that was achieved by Allied forces in Burma. Schools of “Advanced Joint Operations” (formed along the similar lines to, but replacing, SAMS, SAWS and SAAS) would improve the mutual understanding between operational level service planners. Likewise, Joint Command and Staff Colleges, based on the current single service schools, would increase empathy between tactical level single service commanders and staffs.

In Burma, successful nonlinear, noncontiguous Joint operations required an integrated command and control structure and extensive training between the services. The services lived and worked together much more closely, and at much lower command levels than they had done so before. Joint headquarters were established sometimes down to Corps and Divisional level. Air Liaison officers were attached to formations and units, down to battalion level in several cases, to ensure that air support was used effectively. The formation of permanently established joint headquarters in peacetime, therefore, would greatly assist in a transition to nonlinear, noncontiguous warfighting operations. Such a headquarters, which would include a permanent commander in addition to the staff, could be employed at a variety of levels to better coordinate the activities of single service tactical headquarters and to act as an operational, theatre-level field headquarters below the Regional Combatant Commanders. In addition, these headquarters could be used in peacetime to coordinate the joint training activities of tactical formations.

Success in Burma was also partly due to the reduction of the logistic footprint of the formations and units to allow for an increase in tempo. An effective means of reducing the logistic footprint is to remove a proportion of ground-based logistic support elements from formations. The alternative to ground-based CSS is of course aerial CSS. This method was used extensively in Burma; at times the ground forces were receiving 88%<sup>95</sup> of their supplies by some form of aerial delivery. This approach includes the use of transport aircraft that have greater range, ceiling and speed and can carry significantly larger loads than helicopters. This will require extensive cooperation with the US Air Force. The method of delivery, however, is not so critically important. What is more important is that logistic drag is

reduced. To achieve this will require a significant change in mindset over the issues of sustainment, formation organisation and equipment procurement.

The strategic and operational context of the Burma campaign, and its tactical execution, are now more relevant to the type of operations that are currently being conducted around the World. The US and her Allies are involved in a global war. The conflict involves long-term campaigns in a number of diverse theatres. Because the Allies have not mobilised fully for war, each of the theatres is competing for finite resources. Theatre commanders and formations are confronted by operations in complex terrain, which are supported over extended LOCs, against a determined, thinking enemy. The Burma campaign provides ample proof to commanders and planners that a combination of Joint-ness, a reduced logistic footprint, the application of mission command and the operational coordination of widely dispersed tactical formations is vital for the conduct of successful nonlinear, noncontiguous operations.

---

<sup>95</sup> Louis Mountbatten. *Report to the Combined Chiefs of Staff by the Supreme Allied Commander South East Asia, 1943-1945* (London: His Majesty's Stationary Office, 1951), 164.

## BIBLIOGRAPHY

### BOOKS

- Allen, Louis. *Burma: The Longest War. 1941 – '45*. New York: St Martin's Press, 1984. First published in the United Kingdom by JM Dent and Sons Limited, 1984.
- Atkinson, Rick. *Crusade- The Untold Story of the Persian Gulf War*. Boston: Houghton Mifflin Company, 1993.
- Bidwell, Shelford. *The Chindit War – Stillwell, Wingate, and the Campaign in Burma: 1944*. New York: Macmillan, 1979.
- Bierman, John and Smith, C. *Fire in the Night – Wingate of Burma, Ethiopia, and Zion*. New York: Random House, 1999.
- Callahan, Raymond. *Burma 1942-1945*. Newark: University of Delaware Press, 1979.
- Calvert, Brigadier Michael. *Prisoners of Hope*. London: Leo Cooper, 1996. First published London: Jonathan Cape, 1952.
- Chinnery, Philip. *March or Die*. Shrewsbury: Air Life Publishing, 1997.
- Cooper, KW. *The Little Men: A Platoon's Epic Fight in the Burma Campaign*. London: Robert Hale, 1973. Paperback Edition, 1992.
- Craver, Douglas. *Key to Victory: The development of Air Supply Doctrine in the China-Burma-India Theater, 1941 – 1945*. Masters Degree Thesis. Durham, NC: Duke University 1970.
- Donnelly, Thomas, et al. *Operation Just Cause – The Storming of Panama*. New York: Lexington Books, 1991.
- Evans, Geoffrey. *Slim*. London: Batsford, 1969.
- Fergusson, Bernard. *Beyond the Chindwin: Being an Account of the Adventures of Number Five Column of the Wingate Expedition into Burma, 1943*. London: Collins, 1962.
- Fraser, George MacDonald. *Quartered Safe Out Here: A Recollection of the War in Burma*. New York: The Akadine Press, 2001. First published London: Harper Collins Publishing, 1992.
- Gordon, Michael R. and Bernard E. Trainor. *The Generals' War. The Inside Story of the Conflict in the Gulf*. Boston: Little, Brown and Company, 1995.
- Holmes, R (Ed). *The Oxford Companion to Military History*. Oxford: Oxford University Press, 1999.

- Keegan, John (Editor). *Churchill's Generals*. London: Weidenfield and Nicholson, 1991.
- Magyar, Dr Karl P and Dr Constantine Danopoulos (Editors). *Prolonged Wars – A Post Nuclear Challenge*. Montgomery, Alabama: Air Force University Press, 1994.
- Mason, Herbert A. et al. *Operation Thursday – Birth of the Air Commandos*. Montgomery, Alabama: Air Force History and Museums Project, 1994.
- Mountbatten, Earl Louis. *Report to the Combined Chiefs of Staff by the Supreme Allied Commander South East Asia, 1943-1945*. London: His Majesty's Stationary Office, 1951.
- Nath, Colonel Prithvi, VSM. *Wingate – His Relevance to Contemporary Warfare*. New Delhi: Sterling Publishers Private Limited, 1990.
- O'Brien, Terence. *Out of the Blue – A Pilot with the Chindits*. London: Collins, 1984.
- Pagonis, Lt Gen William. *Moving Mountains: Lessons in Leadership and Logistics from the Gulf War*. Cambridge, Massachusetts: Harvard Business School Press, 1992.
- Paret, Peter. *Makers of Modern Strategy: from Machiavelli to the Nuclear Age*. Princeton: Princeton University Press, 1986.
- Perrett, Bryan. *Tank Tracks to Rangoon: The Story of British Armour in Burma*. London: Robert Hale Limited, 1978. Paperback edition, 1992.
- Rossetto, Luigi. *Major General Orde Wingate and the Development of Long Range Penetration*. Manhattan, Kansas: MA/AH Publishing, 1982.
- Scales, Robert H. *Certain Victory: The US Army in the Gulf War*. Fort Leavenworth: US Army Command and General Staff College Press, 1994.
- Schwarzkopf, H. Norman. *It Doesn't Take a Hero*. New York: Bantam Books, 1992.
- Slim, Field Marshall William. *Defeat into Victory*. London: Pan Books, 1999. Original published by London: Cassell, 1956.
- Sutton, John and John Walker. *From Horse to Helicopter: Transporting the British Army in War and Peace, 1648 to 1989*. London: Leo Cooper, 1990.
- Swain, Richard M. *"Lucky War" – Third Army in Desert Storm*. Fort Leavenworth: US Army Command and General Staff College Press, 1997.
- Thompson, Julian. *Lifeblood of War: Logistics in Armed Conflict*. London: Brassey's, 1991.
- Thompson, Julian. *The Imperial War Museum Book of War Behind Enemy Lines*. London: Sidgwick and Jackson, 1998.
- Thompson, Julian. *The Imperial War Museum Book of the War in Burma, 1942 – 1945: A vital contribution to victory in the Far East*. London: Sidgwick and Jackson, 2002.



Vick, Alan et al. *The Stryker Brigade Combat Team – Rethinking Strategic Responsiveness and Assessing Deployment Options*. Santa Monica, California: RAND, 2002.

Van Wagner, R. *1<sup>st</sup> Air Commando Group*. Montgomery: Air Command and Staff College, 1986.

Woodburn-Kirby, S. *The Reconquest of Burma*. London: Her Majesty's Stationary Office, 1965.

## DOCTRINE PUBLICATIONS

British Army. *Design for Military Operations – The British Military Doctrine*. London: Her Majesty's Stationary Office, 1996.

Joint Publication. *Joint Doctrine Encyclopedia*. Washington DC: Department of Defense, 1997.

United States Army. *FM 100-5: Operations*. Washington DC: Headquarters, Department of the Army, 1993.

United States Army. *FM 3-0: Operations*. Washington DC: Headquarters, Department of the Army, 2001.

## PERIODICALS

Biddle, Stephen. "Afghanistan and the Future of Warfare," *Foreign Affairs* volume 82, 2 (March/April 2003): 38.

Foss, John. "Advent of the Nonlinear Battlefield: AirLand Battle Future," *Military Review*, (January 1991): 25 – 40.

Grau, LTC Lester W. "Soviet Nonlinear Combat in Future Conflict," *Military Review* (April 1991): 16-28.

McCarthy, Damian J. and Susan A. Medlin. "Two Hats for the Joint Force Commander," *Joint Force Quarterly*, (Summer 2000): 91-98.

Mead, Peter. "Orde Wingate and the Official Historians," *Journal of Contemporary History*, 14, no. 1 (1979): 55-82.

Owen, Robert C. and Todd A. Fogle. "Air Mobility Command and the Objective Force: A Case for Cooperative Revolution," *Military Review*, (January-February 2001): 11-19.

Paparone, LTC Christopher R. "Multilinear Warfare," *Army Logistician*, (November- December 1996).